APRIL, 1951

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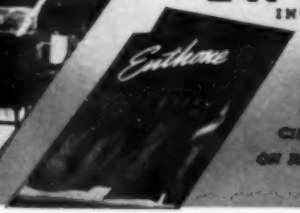
If a standard stripper will not remove the coating on your work, a new one tailor-made to do the job will be formulated. To save time, fill out our questionnaire and return with samples for free laboratory service.



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Industrial FINISHING

W. H. ROHR, Editor P. C. BARDIN, Associate Editor

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APRIL, 1951
Vol. XXVII, No. 6

CCA

monthly magazine for finishing
oom and paint shop foremen,
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ompany executives of industrial
ants where production cleaning
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Acceptance under Section 34.64, P. L. & R., authorized

27 TWENTY-SEVENTH YEAR OF PUBLICATION

Makes Water Rustproof. A liquid chemical "Immunol" has been developed which, when added to water, hot or cold, immunizes it against rusting ferrous metals. In addition it imparts unusual detergent properties and complete "wetting out" action. Immunol solutions are odorless and neutral, contain no soaps or alkalies, are non-inflammable and will not affect the skin. Replaces alkali cleaners and inflammable solvents. A product of Haas Miller Corporation 4th and Bristol Sts., Philadelphia 40, Pennsylvania.

* * *

Decorators' Paint. A revolutionary new interior paint that has unusual decorative qualities combined with the rugged durability and washability of an enamel and yet possessing the appearance and usefulness of a flat wall paint, is announced by one of the well known paint companies.

The new product, to be known as Wallhide Rubberized Satin Finish, has rubber-like characteristics with a distinctive sheen.

This new finish requires no special primer because it acts as its own primer. It may be applied by brush, spray or roller coater on any interior wall or ceiling surface including new or old plaster, paint, wallpaper, wallboard, brick, concrete, cinder block, wood, or primed metal.

Grease, crayon, lipstick, finger smears, and ink spots may be easily removed from the painted surface because the rubber-like film prevents such materials from penetrating the surface.

* * *

Phone-Answering Machine. When the man in the shop is unable to leave his work or when the office phone is unattended, the Electronic Secretary, the new automatic telephone answering machine, carries on. No longer does the shop foreman have to miss

any telephone calls because he's busy or the office is closed. The Electronic Secretary answers the phone automatically, takes messages and also tells the caller when he will return. In case of an emergency at night, the caller is told where this official can be reached. The Electronic Secretary is easily installed as it is not connected to the phone. Just plug it in and use.

* * *

Pressure Sensitive Felt. A new self-adhesive felt product is marketed under the trade names "Feltape" and "Feltdots". The product, a pressure-

(Continued on page 12)

Introducing

A BRAND NEW, AND TOTALLY DIFFERENT PRODUCT

No. 2100

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LACQUER

OVER 35% SOLIDS—May be sprayed **HOT or COLD, without thinning** or **adjusting** of **any kind.**

HEAVY BODIED *(over 35%)*
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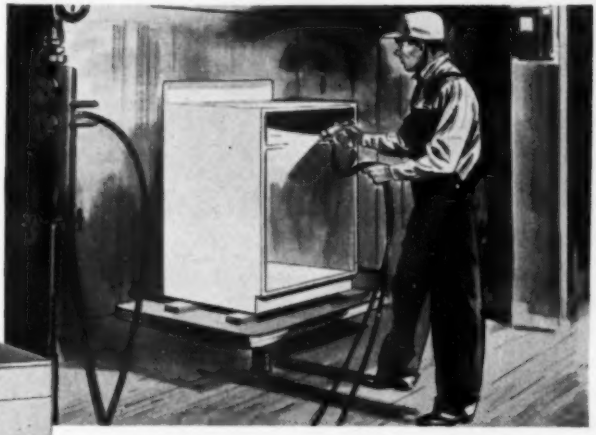

Problem:

Customer's finishing line was plant bottleneck. Production of quality kitchen cabinets, like that shown below, was limited to less than half of actual plant capacity. Something had to be done—*fast!*

Result: The Glidden Technical Service Representative was called in to study the problem. His recommendations—rearrangement of work flow... redesign of conveyor system ...and adoption of new finishing techniques—eliminated the bottleneck. Production jumped immediately . . . eventually increased 103%.

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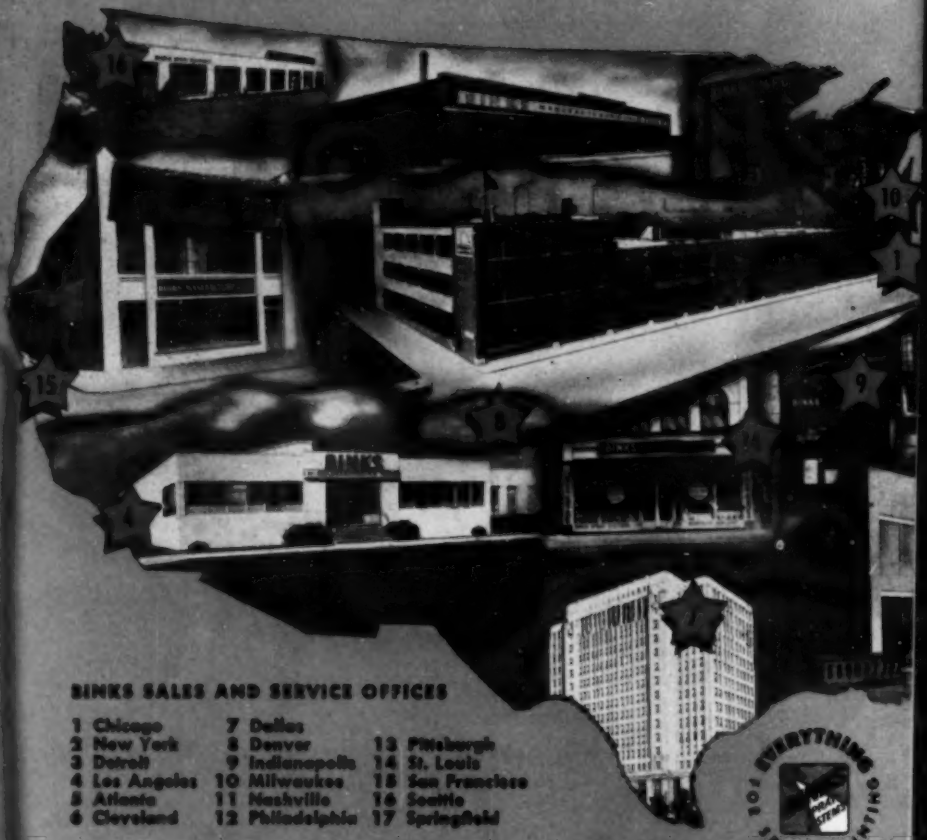

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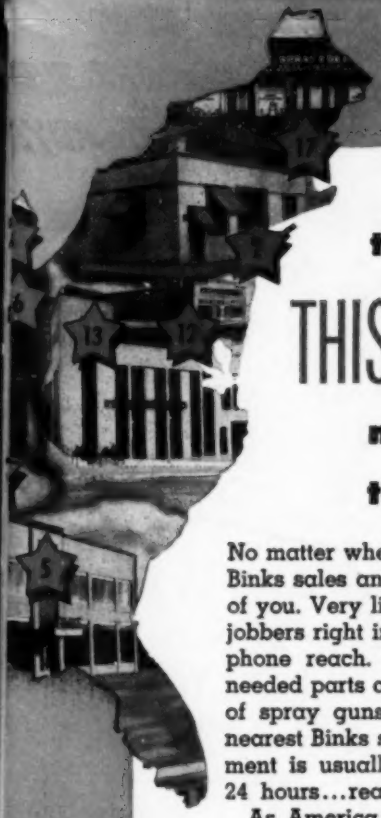

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No matter where your plant is located, there is a Binks sales and service office within a few hours of you. Very likely, you'll find one or more Binks jobbers right in your own city...within easy telephone reach. These men are ready to supply needed parts and to help you. Major overhauling of spray guns and equipment is done at your nearest Binks service office. Reconditioned equipment is usually on its way back to you within 24 hours...ready for years of additional use.

As America swings into its giant defense program, the importance of immediate service on spray finishing equipment greatly increases. In "defense plants" finishing departments must be expanded and maintained to keep abreast of stepped-up manufacturing...in all plants equipment must serve longer. In either case Binks Engineering and Service Departments are ready to give you the instant attention you need...whether it's the design and installation of a new finishing department, counsel on the application of new finishes, or a rush repair job.

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sensitive self-adhesive, 1/16-in. thick, comes in the forms of tapes and strips, washers, discs and special shapes.

Feltape is produced in widths from 1/8-in. to 6-in. Feltdots are made in standard discs or round spots in diameters of 1/4-in. and 1/2-in. Other sizes can be obtained on special order, as well as Feltdot washers and other special shapes, die cut to specifications.

* * *

High-Conductivity Concrete. A new development in concrete, which is expected to substantially reduce the cost of radiant heating and broadly enlarge its field of application, has been perfected by Products Planning Co. of Pittsburgh, Penna.

* * *

Wood Industries are beset with many problems arising from the need for expanding their normal production to meet national defense mobilization demands, while seeking also to keep pace with non-defense needs. They are now searching for ways and means to put together their manpower, money, materials and manufacturing ability to insure the best possible service during this period of half-war and half-peace.

Nine technical societies are pooling their collective technical skills and knowledge to present the wood industries with the best possible information on new facts and trends as they affect both individual businesses and the wood industry as a whole at the fifth annual national meeting and international industry show of the Forest Products Research Society being held at Convention Hall in Philadelphia the week of May 7, 1951.

* * *

Chemically Treated Lumber. Five hundred flatcars of the C.R.I. & P.R.R. are being re-decked with chemically protected lumber at the company's Peoria, Ill., shops. The chemical is ex-

pected to extend the life of the decking two to three times.

Planking for the new decking is pressure treated with Penta, common term for pentachlorophenol, at the Little Rock, Ark., plant of the Koppers Company, Inc.

The chemical, a product of Monsanto Chemical Company, is widely used to protect structual and other lumber against decay, termites and other degrading organisms. Properly applied, it results in a permanent treatment which is clean and easily handled.

* * *

Defense Light. A new automatic emergency hand lamp that plugs into any 110-volt A. C. wall outlet and furnishes instant, automatic emergency lighting when the regular source of current fails, is announced by Electric Cord Co., 195 William St., New York 38, N. Y. Adjustable 21 C. P. flood type head is designed to fit Burgess 7½-volt battery or equal. Can be manually operated for use as a hand lamp.

* * *

Construction Contracts Up. February construction contract awards were 9% higher than January and 46% more than February 1950 in the 37 states east of the Rockies, it was announced by F. W. Dodge Corporation, construction news and marketing specialists. The total for the first two months of 1951 was $2,183,775,000 or 45% more than the comparable figure for 1950, according to Dodge.

* * *

The "Cut Rite Bloc", a new, long-lasting cutting block that contains Hycar nitrile type rubber, has been especially designed for use in cutting leather, rubber, cloth, canvas, cork, copper, soft plastics, aluminum, fibre and paper products. Custom supplied

(Continued on page 123)

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You'll get a cleaner surface with the improved DETROIT HANDY "TAC" RAG. Standard of your FINISHING INDUSTRY for 16 years. Removes all particles of dust, lint and sand. Non-inflammable! Order from your supplier today, or send for sample.

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. . . the **EXPERIENCE** that goes into the **PLANNING** and **ENGINEERING** of **MAHON EQUIPMENT** is the item of **GREATEST VALUE** to **YOU!**

Illustration above shows Vertical Conveyor at Left which Carries Painted Barrels to Finish Baking Oven Above. At bottom center is Special Spray Booth and Exit End of Dry-Off Oven. The Dry-Off Oven and the Finish Baking Oven are Combined as a Single Unit in a Double Deck Arrangement.

Steel Barrels Passing From Cleaning and Test Operation and Entering the Ramp to the Dry-Off Oven.

M

Finishing SYSTEMS

. . . for ENAMELS • LACQUER • PAINT • VARNISH

Steel Barrels Emerging from Dry-Off Oven and Passing Through Special Spray Booth. Note Vertical Conveyor at Right.

With MODERN Continuous Processing Equipment Painting of Steel Barrels Becomes a Minor Cost Item!

The finishing system illustrated here was developed in collaboration with the customer's engineers to handle production painting of steel barrels and drums. It consists of two painting production lines each of which includes cleaning and test facilities, a dry-off oven, a special spray booth and a finish baking oven. One of the unique features is the combined Dry-Off and Finish Baking Ovens—these are arranged in a double deck unit located just below the ceiling to conserve floor space. Vertical conveyors carry the barrels straight up as a further measure of space saving. This is another typical example of production planning where new methods and modern equipment have produced better results at lower cost. When you are in need of new finishing equipment—no matter what your requirements may be—it will pay you to consult Mahon, because, Mahon engineers have pioneered development in this highly specialized field for over thirty years . . . their broad experience in every industry where finishing constitutes a major production operation has endowed them with a wealth of technical knowledge and practical know-how not available to you elsewhere. See Mahon's Insert in Sweet's Mechanical Industrial File, or write for Catalog A-650.

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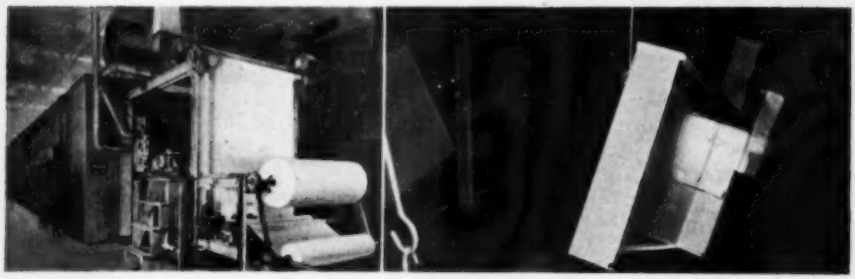

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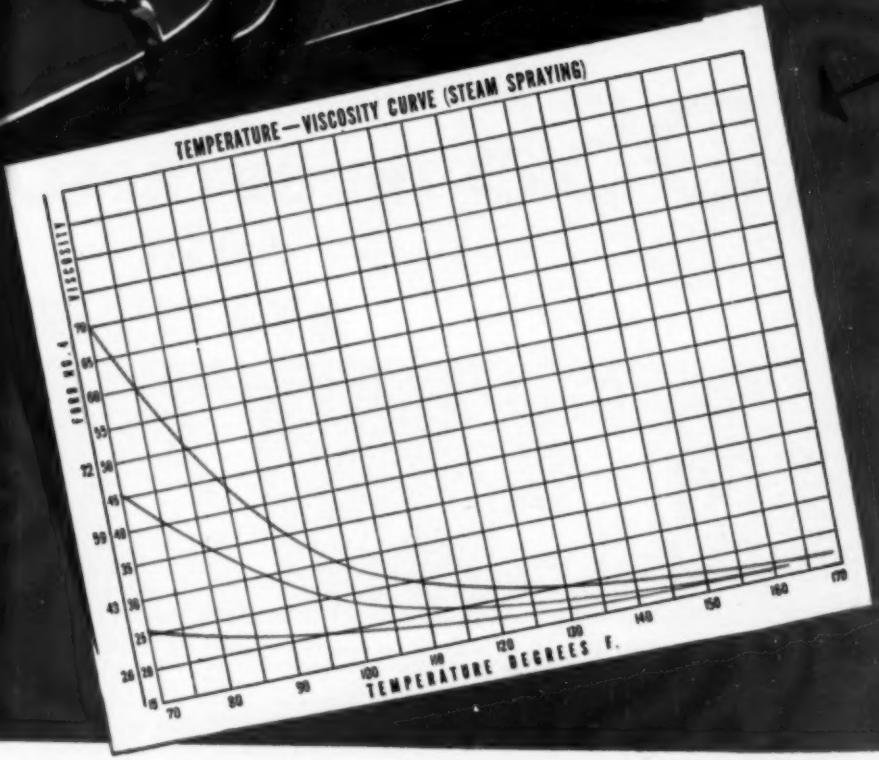

KELLOGG DIVISION, 94 HUMBOLDT STREET, ROCHESTER 9, N. Y.

Brake Shoe

# of finishing materials with STEAM spraying

Operating figures demonstrate that the new steam spraying process probably can save you time and money in your finishing operation. Our production line systems installed to date indicate that you can save up to 10-20% of expensive basic material, and even higher percentages of solvents and thinners, these 2 ways:

1. By heating material at the point of atomization. The temperature-viscosity chart opposite shows what happens to the viscosity of finishing materials as temperature rises. Despite initial viscosities ranging from 25 to 70 at 70°F., due to varying percentages of solvent, all three samples thin down to about 17 at 160°F. Thus by heating it is possible to spray materials with but a fraction of the normal amount of thinner. Finishing materials quickly revert to their original viscosity upon striking the surface, permitting the application of thicker coats in one pass of the gun without sags or runs.

2. By reducing overspray and atomization losses. Materials sprayed with compressed air tend to "bounce off" sprayed surfaces. The air is constantly clouded with paint mist—valuable material lost. But with steam spraying, superheated steam dissipates on leaving the gun, appreciably reducing "bounce-off" and overspray loss.

In addition, you can increase operator productivity with steam spraying's thicker coats, speeding your operation and cutting labor costs. Coats are equal to, or better in quality than, conventional finishes, and are surprisingly free from sags, popping and runs.

The heart of the process is the Brake Shoe Steam-Spray gun. Cool to the touch (exclusive insulation, heat radiating design and built-in finger guard assure this) and finely balanced (hose support reduces downward torque on the head), this gun makes the process practical for production-line use.

Brake Shoe can supply you with all the equipment necessary for steam-spraying. We will be glad to demonstrate the process in your own plant, or arrange visits to convenient installations. Mail the coupon today.

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Get Better, More Uniform Coverage

Use Less Manpower...Use Less Air

Reduces Off-Spray to a Minimum

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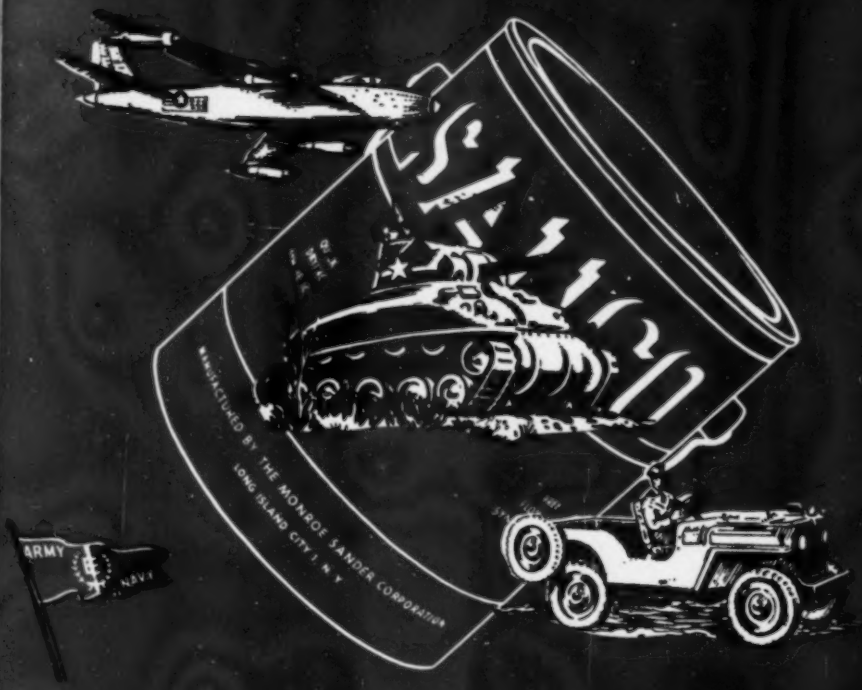

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SANCO has rolled up its sleeves — just as it did in World War Two. ALL our skilled chemists and technicians who earned for us the coveted "E" are again tackling and solving problems involving a wide variety of finishes required for all types of defense products. They are alert to new government specifications and prepared to meet them. Our facilities have been expanded so that we can handle all civilian demands and give superior service to companies manufacturing materiel for every branch of the armed services.

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- We have always taken pride in turning out products that are more than just satisfactory. They must excel in their field. That's why Spruance primers, paints, lacquers, varnishes and enamels are "specified" by manufacturers of quality finished wood and metal specialties.

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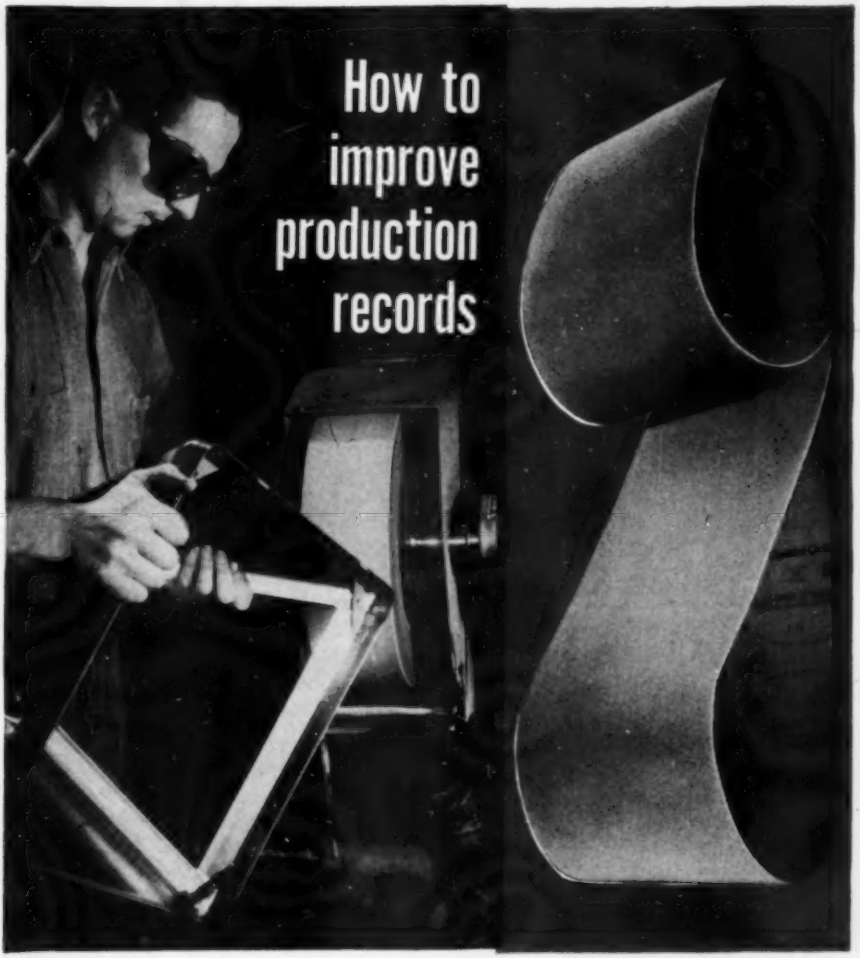

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Finishing Metal Kitchen

Like any other furniture in a modern home, metal cabinets must have an attractive as well as a durable finish. The metal cabinets we manufacture must take a lot of punishment. They are subjected to cooking fumes, food stains, and scrubbing with soap and water.

Degreasing double-door wardrobe cabinets, lowering and lifting them by power hoist.

To produce a satisfactory finish for our cabinets calls for intelligent use of the best of materials, plus careful supervision of all operations, such as cleaning, spray painting, baking, and final inspection of the finished product.

What We Make; What Equipment We Have

We manufacture about 28 different types and sizes of kitchen cabinets, so you can see that our finishing system must be more or less flexible to handle the various size cabinets.

Our equipment consists of a vapor-type degreaser, a 300-ft. variable-speed overhead chain conveyor, two water-wash spray booths, a 100-ft. gas-fired baking oven and one dry-type spray booth in which we spray on the black trim.

The finishing department alone takes up approximately 15,000-sq. ft. of floor space. Paint is piped to the spray booths from the mixing room which is located just to the rear of the two white spray booths.

Using 20-lbs. of pressure on the paint tanks, the paint flows through a paint heater which heats it to 125° F., thereby letting the operator spray more solids with each pass of the gun.

Degreasing; Wiping With Thinner; Tack Ragging

Cabinets are delivered to the finishing department on a belt conveyor. On this belt conveyor they have

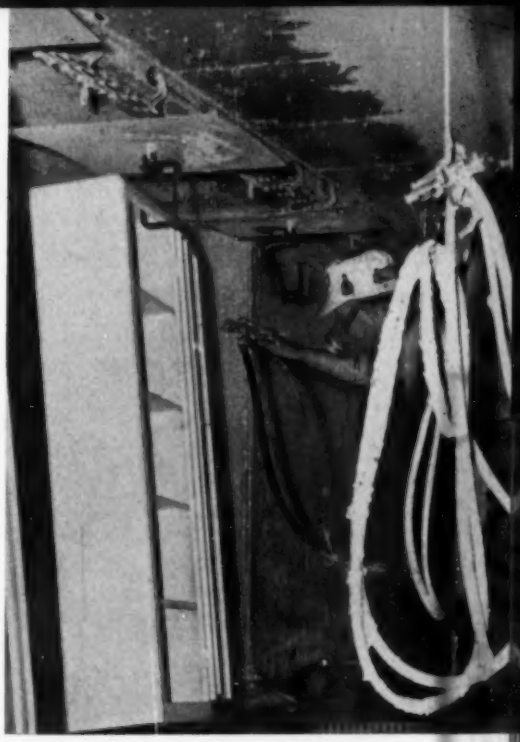
Cabinets . .

By George K. Clapper
Finishing Superintendent
Alabama Metal Products Co.

gone through the final stages of assembly and have been inspected for any mechanical defects. They are then placed in racks especially made for them, and transferred to an overhead monorail conveyor. They are lowered into the vapor degreaser where they remain for about three minutes, depending on the cabinet and the size of the load.

During the vapor cleaning process, cold trichlorethylene is pumped over the cabinets for a few seconds with a hand spray. This aids in the condensation, allowing the oil to dissolve and flow off much faster.

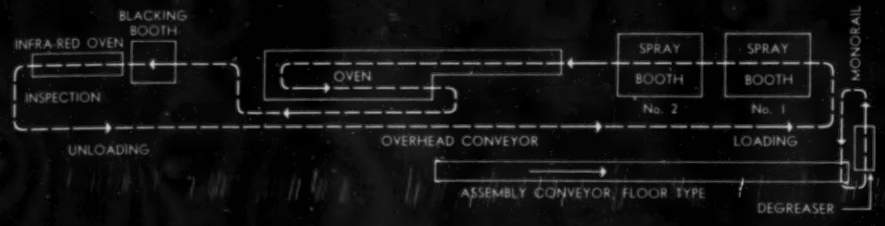
After removal from the degreaser, cabinets are transferred to the main overhead conveyor. At this point a helper gives them a wipe-down with thinner to remove any traces of hand prints or drawing compounds that might have been left on the surface. Another helper tack rags each cabinet inside and outside just before it enters the spray booth.



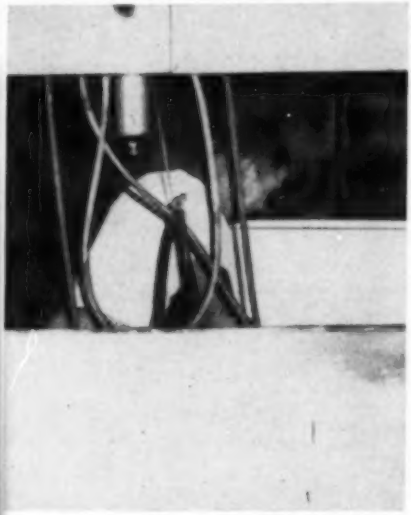
Here an operator is spray painting the inside of a single-door utility cabinet.

We Spray Hot Synthetic White Enamel

In the first spray booth two operators apply a finish coat of white synthetic enamel to the interior of each cabinet. The hot enamel is



sprayed at 18-seconds viscosity, as measured with a No. 2 Zahn cup, and using 65-lbs. air pressure to atomize the paint.



This picture shows workman applying black trim to a 54-in. deluxe undersink cabinet.

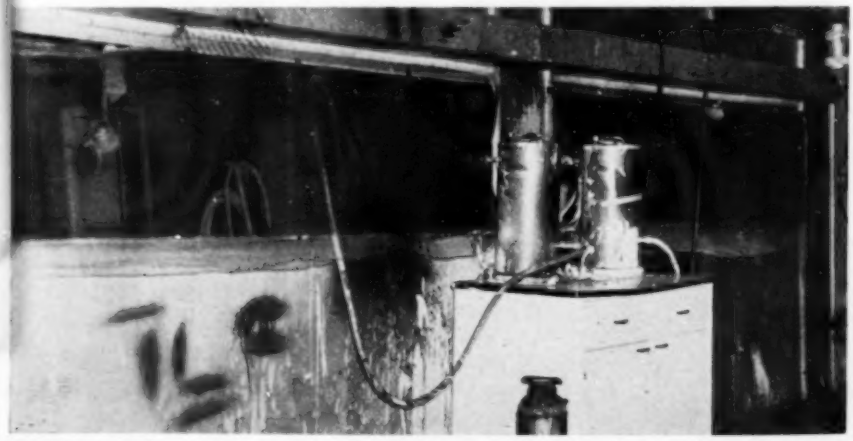
After a flash (air drying) time of two minutes, cabinets enter the second spray booth. Using the same viscosity and hot spray, the first operator applies a mist coat of 0.2-mil to the outside. This mist coat allows the second operator to build up a uniform finish coat of 1.8-mils.

There is another two minute flash time before the cabinets enter the oven where they are baked for 18 minutes at 300° F.

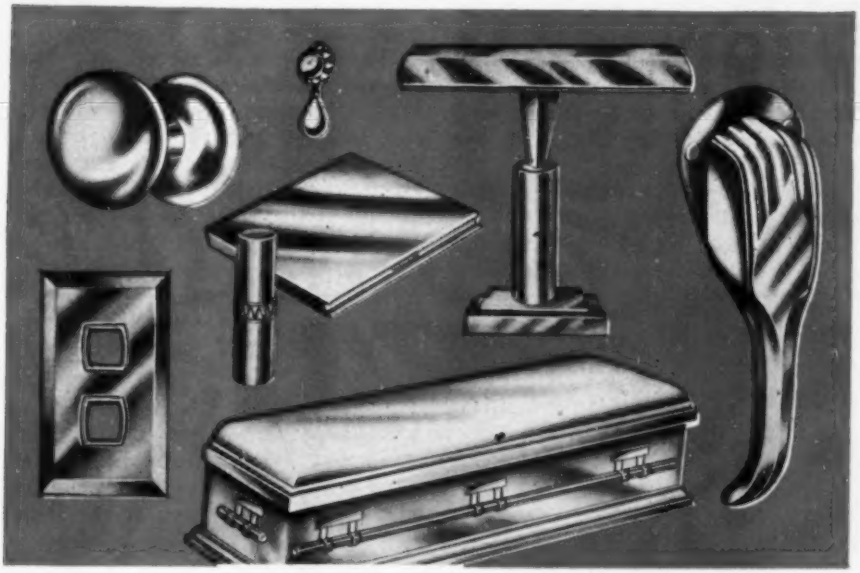
After leaving the oven they have a 15-minute cooling period before entering the black trim booth. Using a special cut mask the operator sprays a 4-inch black trim around the base of the cabinet with black lacquer. The cabinets then pass through a 25-ft. section of infra-red lamps to cure the black trim.

Adequate Inspection .... Perfect Products

At this point the finished cabinets reach the final inspector who checks each one thoroughly for



Outside view of one of the water-wash spray booths. Front openings are covered with two thicknesses of cheesecloth that have been dipped in a special oil; this now serves as an air filter. Notice two paint heaters located on one of our cabinets in front of spray booth.



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MANUFACTURERS OF INDUSTRIAL FINISHES

flaws. Any rejects remain on the line and travel back around to be repaired and repainted. All perfectly finished cabinets are taken off the conveyor to be packed and sent to the loading docks or the warehouse.

In conclusion, I must add that adequate inspection is just as important as any phase of building a cabinet. It can mean the difference between turning out good or bad merchandise.

We have a system that has worked favorably. It includes a head inspector who is responsible for quality from start to finish. Several inspectors under him are stationed at various points throughout the plant. They are responsible to the head inspector only, and it is their job to weed out any parts that show the least imperfection.

This system has worked so well that it has cut our rejects to a minimum and at the same time allowed a large increase in our production.

From the seven basic Clair designs, a custom-made machine can be developed to give greatest efficiency in your surface finishing operation. With totally enclosed, abrasion-proof hydraulic circuits and adjustable controls, Clair Machines provide the precision and trouble-free operation necessary for efficient surface finishing on a production basis.

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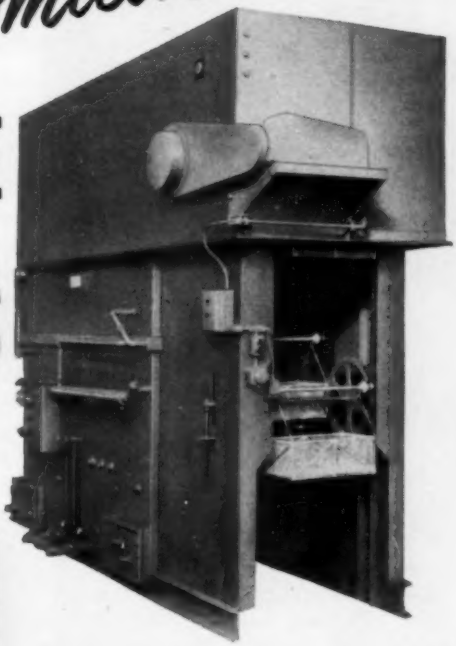

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Blakeslee Solvent Vapor Degreasers USE LESS SOLVENT because of the patented construction and operational features. Metal parts are made chemically clean and dry in just a few seconds. Save time, labor, rejects with a Blakeslee Solvent Vapor Degreaser. A Blakeslee engineer-trained representative is available to solve your specific degreasing problems.

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Automatic

By P. C. BARDIN
Associate Editor

(PART II)

Close-up of the spray station showing the stationary mounting of four automatic spray guns. This setup has a skip-spray control system that prevents guns from opening when empty spindles pass the spray station. Photo, courtesy of The DeVilbiss Company.

AUTOMATIC spray painting machines may be divided into at least five classifications:

1) Traveling upright spindles (with work holders) mounted on a chain-on-edge conveyor.

2) Transverse reciprocating machine (horizontal and vertical), wherein spray guns move back and forth at right angles across the path of flat or nearly flat surfaces traveling along by conveyor.

3) Rotating table with upright spindles and work holders near the rim so the work moves past one or more spray stations.

4) Special purpose machines.

5) Electrostatic setups.

Machines in all of these classifications have certain features in common, such as manual loading and unloading stations, stationary or movable gun holders or carriages, conveyors with variable speed drives and, in some cases, a force-drying chamber. Each unit in the machine must be properly designed and synchronized with other units.

Once an automatic machine is properly set up and placed in operation it will work with the precision and steady regularity of a clock. Every piece of work removed from work holders will be uniformly coated (complete and exact coverage, uniform thickness film and uniform drying or baking) and this spray painting will be performed by the machine with steady regularity hour after hour.

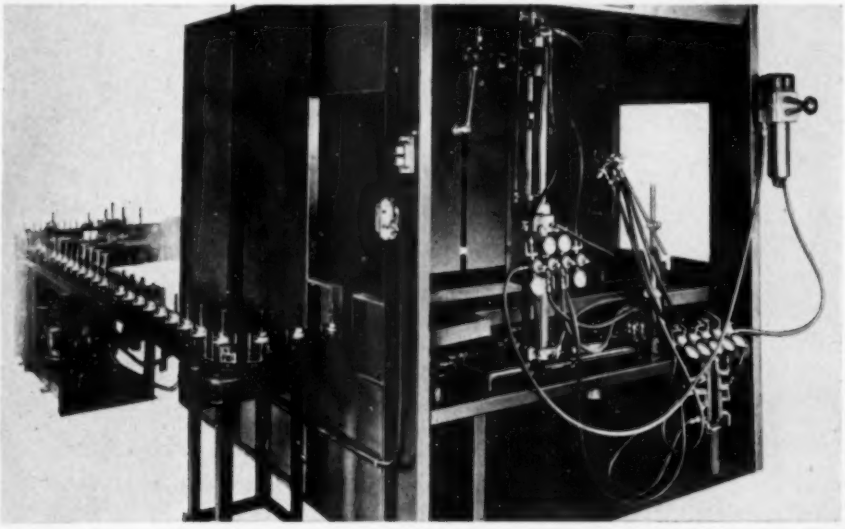
With the exception of the transverse reciprocating type of machines which are designed for coating flat or nearly flat surfaces, the other automatic spray machines are adaptable within reasonable limits,

Spray Painting . . . .

Revealing more of the possibilities of automatic spray painting equipment for the mass production coating of a variety of manufactured parts and products in many different sizes and shapes.

to spray painting a variety of sizes and shapes of products. Different work holders, each designed to hold an article of specified size, shape and weight, make it possible to coat parts or products of various sizes and shapes on the vertical spindle and rotating table types of spray machines. Even the special purpose machines, designed for coating bombs, large shell cases, rocket tubes and other defense products may be converted to peace time use for finishing such things as steel barrels and similar products.

Anything that can be spray painted by hand can be spray painted automatically. Machines can be designed, built and set up to do practically any job perfectly. Of



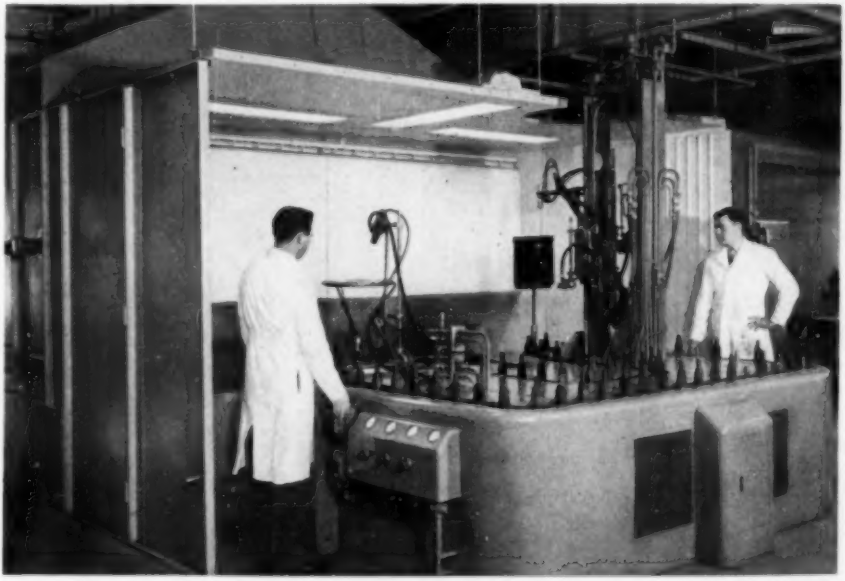
An automatic spray painting machine with a chain-on-edge conveyor which has upright spindles to support work holders. The spray gun can be positioned to coat both exterior and interior surfaces in the same spray zone. Photograph, courtesy of Binks Manufacturing Co.

course, sound reasoning and practical economics must be relied upon to determine whether or not it's profitable to do certain spray painting jobs with an automatic spray painting setup. Automatic spray painting is wonderful for mass production jobs but seldom if ever advisable for a variety of short-run orders. A trained representative of the manufacturer of automatic spray painting machines is usually in better position than anyone else to advise about the wisdom of acquiring and using an automatic spray painting machine of conventional or special design for work of any specified nature.

Table-Height Conveyors With Work Holders

Several automatic spray painting machines that have a wide range of usefulness are those with the chain links positioned on edge and moving in a level track at or near work bench height. The sprocket wheels rotate on upright spindles. A vertical pin or spindle extends upward from chain links spaced at regular intervals, and upon these upright spindles or pins are placed work holders, each one designed to support or hold a part or product to be spray painted.

The chain is driven through a variable-speed drive at speeds rang-



An automatic chain-on-edge machine showing two spray stations. The spray station at the left applies finish coatings to all external surfaces of symmetrical or nearly symmetrical forms. The spray station at the right is equipped with a vertical moving spray carriage designed to coat interiors and exteriors of clyndrical objects simultaneously. At both spray stations the object is rotated rapidly to assure complete and uniform coverage over the entire surface. Photograph, courtesy of The DeVilbiss Company.

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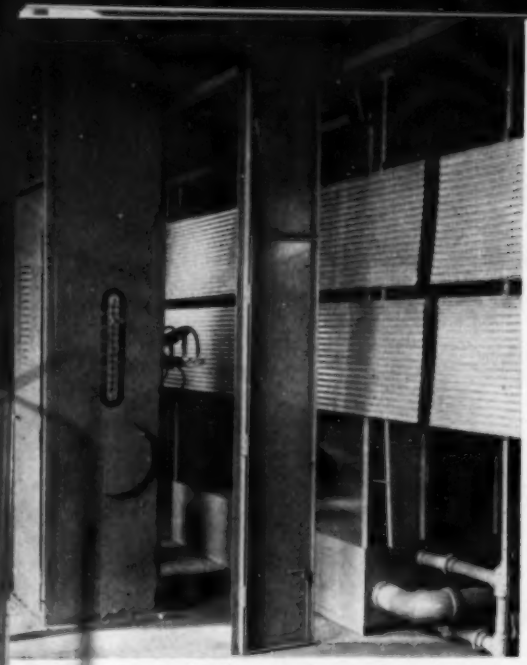

An overhead monorail conveyor carries corrugated metal sheets through spraying zone of vertical reciprocating spray machine. Photograph, courtesy of The DeVilbiss Co.

ing from 2-ft. per minute to the maximum rate at which manual loading and unloading is possible. This would be about 40-ft. to 50-ft. per minute for some products. In most of these machines the track in which the chain travels is 24-in. to 30-in. above floor level.

In many of these conveyorized vertical-spindle spray painting machines, hollow-sleeve spindles are slipped over the extended pins at centers far enough apart to accommodate the size of the object to be coated. Within the spraying zone or zones these vertical spindles can be mechanically rotated so that all areas of the object supported on a work holder will be exposed directly to the spray. Through adjustments the object can be rotated two or more revolutions while passing through the spraying zone.

Skip-Spray Device; Water-Wash Booth

A skip-spray device is generally located just ahead of the spraying zone so that if an empty spindle comes along, the spray guns will not open up. This mechanism is controlled in some cases by air valves; in others, by electric eye.

In most cases a water wash spray booth is advisable for a vertical-spindle type of machine. In some machines the booth is built in as an integral part of the machine; in others the spray booth is built around the machine. The latter arrangement is often followed where two spraying zones are used—one zone for coating the outside of an object, the other for coating the inside surface. On machines that have only one spraying zone, both the inside and outside surfaces of the object are coated in the same zone. Whether or not the particular machine has one or two spraying zones, the principle involved is similar.

For coating the outside surfaces of some products, spray guns mounted on the gun carriages remain stationary, while for other products the gun follows the object as it moves along within the spraying zone, and then returns. This following gun carriage is used for coating products that would be difficult or impossible to coat satisfactorily by merely revolving the object before a stationary gun.

For Coating Interiors; Two Methods

For coating the inside surfaces of products as they revolve within the spraying zone, a spray gun may be

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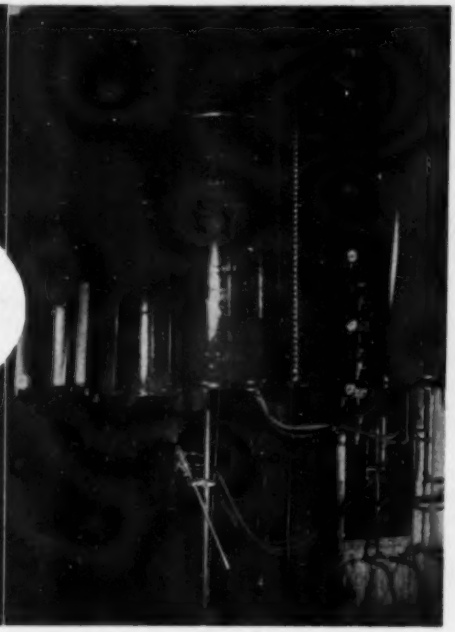

Automatic electro-spray process for auto mufflers eliminates variable results of hand-spray method.

● Where uniform high quality in painting is important, you can depend upon RANSBURG Electro-Spray to do the job.

Take for instance, the AP Parts Corporation, in Toledo, Manufacturers of automobile mufflers. This company converted from hand spray to RANSBURG Electro-Spray.

Results? Quality is tops, with 100% coverage. Paint savings, 62% of former cost. And the flexibility of the unit permits rapid change for handling units of various sizes and colors . . . an important feature for this customer.

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We will analyze your individual paint requirements. Possibilities can be checked quickly in our test laboratory by Ransburg engineers.

RANSBURG ELECTRO-COATING CORP.

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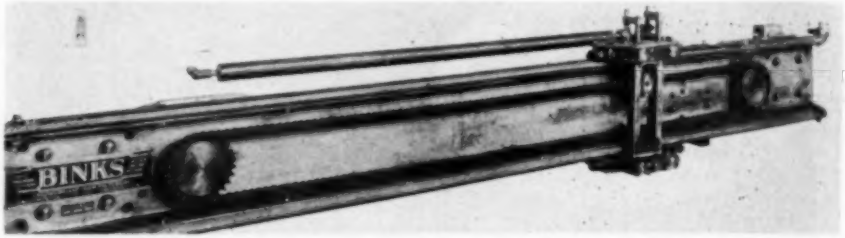
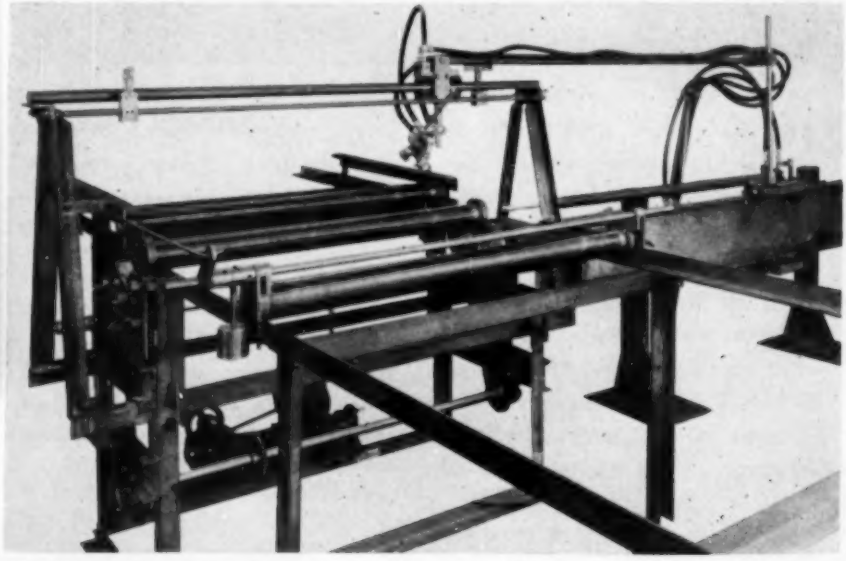
attached to the piston of a double acting cylinder mounted in such a position that the extended nozzle will be inserted into and withdrawn from the interior of the object. In some models of this type of machine, the spray gun with extended nozzle is mounted on the carriage of a vertical transverse reciprocating unit which is chain driven, as in the accompanying illustrations. Whether air driven or chain driven, this spray gun also follows the work within the spraying zone. [*To p. 42*]



A close-up view of the reciprocating unit which guides and moves spray guns that spray the rocket tubes, one at a time, while tube rotates. Notice the extension spray nozzle that enters long tube to be sprayed. Photograph, courtesy of Binks Manufacturing Company.



Automatic spray machine for coating outside and inside surfaces of rocket tubes. As the tube to be coated rotates on narrow rollers at each end, the reciprocating unit at right moves both the outside guns and the inside gun the full length of the tube. The interior of tube is sprayed as the extension gun is being withdrawn. Photo, courtesy of Binks Mfg. Co.

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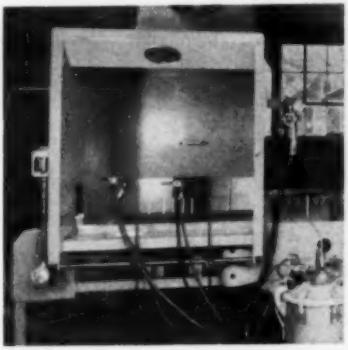
It will accommodate pieces of from less than 1-in. diameter to over 12-in. diameter, which require a high quality finish, such as lipsticks, clocks, pens, pencils, door knobs, etc. Positioned on work holders, pieces are automatically sprayed, travel on through a drying chamber for solvent evaporation, and then into electric strip-heated bake oven from which they emerge for a cooling period before being removed.



View of booth showing automatic spray guns—lower view shows conveyor arrangement and drying and baking compartments.

This makes for speedy, high quality production, and effects exceptional savings in the coating of pieces of various sizes and shapes that are ordinarily difficult to handle economically. Let us make a test run of your own work samples—no obligation.

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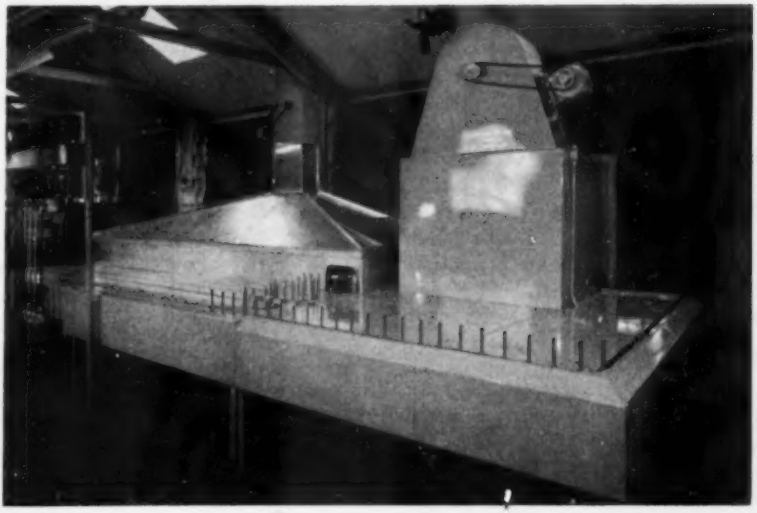

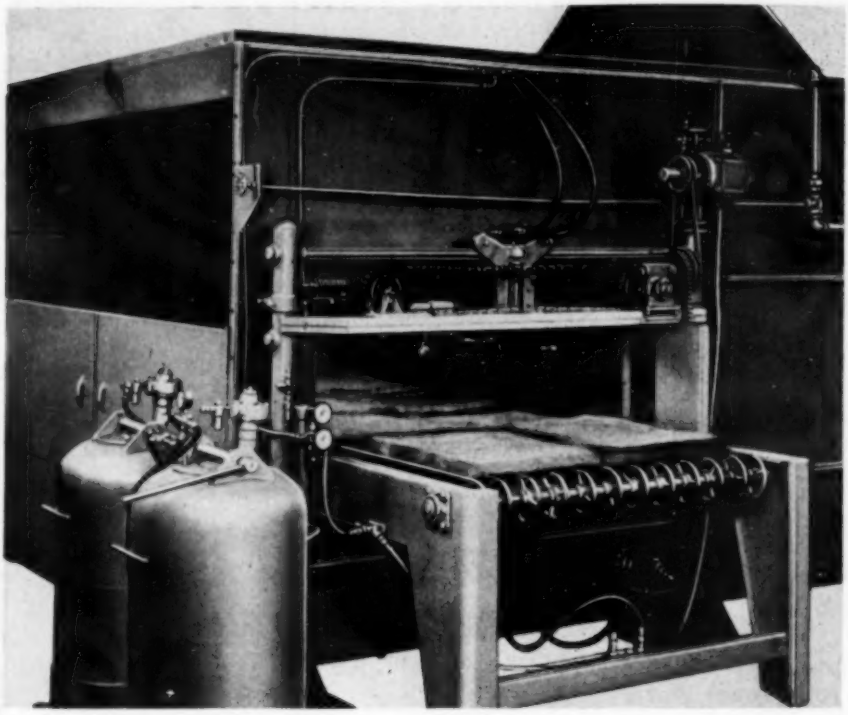

Horizontal, transverse reciprocating type of automatic spray machine used for coating both sides of flat work such as the filter pads shown. Timing and length of stroke on both gun carrieges are identical. Photograph, courtesy of Paasche Airbrush Company.

For interior coating, the length of the stroke as well as the length of time the gun operates—both are adjustable. In most instances, coating the inside surface of any object is done on the outward or return stroke of the gun. This is done to prevent building up air pressure inside the object, and as an aid in keeping the nozzle of the gun clean.

For coating the insides of objects in which the aperture is too small to admit an extended gun nozzle, there is a method known as "puff-spray" in which the gun nozzle rests for an instant on top of the object, and atomized material is puffed or blown down to coat the inside surface. In this case the spray gun would follow the work through the spraying zone.

Two Types of Transverse Reciprocating Machines

A horizontal transverse reciprocating machine consists of a flat bed conveyor—usually a series of parallel chains or cables, with or without cross bars or slats, or a metal mesh belt. The conveyor is

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driven through a variable speed drive at rates ranging from 6-ft. to 30 or 40-ft. per minute. In some cases it may be possible to increase the speed beyond this maximum, depending upon the size of the flat work to be coated and the quality of finish desired. For convenience in loading and unloading, the top of the cables or belt is generally 24-in. to 30-in. above the floor.

A crossarm, which serves as a track or guide and support for the gun carriage, is located above the conveyor and extends across its width. A motor driven chain drive propels the gun carriage back and forth above and across the conveyor in measured strokes. Immediately below the spraying zone is a down-draft water-wash spray booth.

The gun carriage can be adjusted to travel the full width of the conveyor, or its stroke can be shortened so the gun or guns travel across only part of the width of the conveyor. This shortening of the stroke is seldom necessary; if narrower width stock is to be coated, the length of time the spray guns are open may be shortened to compensate for the reduced width.

Spray guns should be adjusted to spray just to the edges of the work being coated, cutting off the spray momentarily before the return stroke. This adjustment will help to save paint and prevent the conveyor from becoming loaded with overspray if the work does not cover the entire conveyor width. This type of automatic spraying machine is seldom equipped with a skip-spray device, therefore it is desirable that the operator keep the stock butted end to end to completely fill the width and length of conveyor while the machine is in operation. If the nature of the work does require a skip-spray, it can be arranged with an electric eye type of control.

The gun carriage is fully adjustable up and down so that spray guns may be positioned at any desired distance from the surface of the flat stock being coated. The carriage will hold from one to six spray guns, and they may be adjusted to form a continuous pattern as the work passes beneath them. Naturally, the reciprocating action must be synchronized with the conveyor speed and adjusted to the number of spray guns used.

If force drying or baking of the finish is required, the coated sheet stock may be manually or automatically transferred—whichever method is more desirable or convenient—to a flat bed conveyor at the exit end of the spray machine, and then carried through an oven.

The vertical transverse reciprocating machine is similar to the horizontal type, insofar as spray action is concerned, except the reciprocating motion is vertical instead of horizontal. Because of this fact the machine generally has a skip-spray device to prevent the guns from opening if an empty hanger enters the spraying zone.

Acknowledgment: Information and pictures for use in this series of articles were supplied through courtesy and cooperation of the following manufacturers: Binks Mfg. Co., Capitol Machine Co., Conforming Matrix Co., DeVilbiss Co., J. Holland & Sons, Inc., and Paasche Airbrush Co.

(To be continued)

"Freedom of thought and independence of action..."

DONALD W. DOUGLAS
President, Douglas Aircraft Company, Inc.

"Freedom of thought and independence of action are among the keynotes of America's economy. They are fundamental to our way of life. Systematic savings through the Payroll Savings Plan help the individual maintain his own independence and freedom of action and make us strong as a nation."

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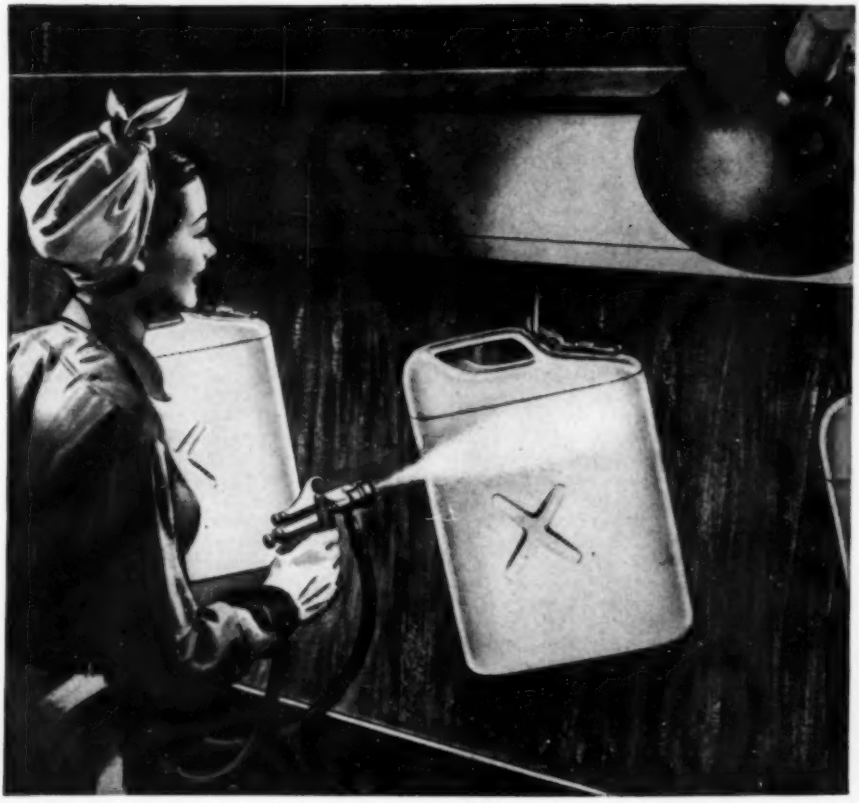

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lines means lines!

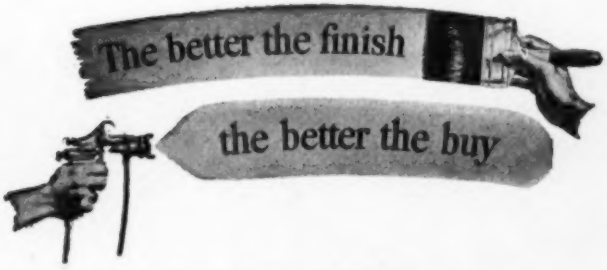
INDUSTRIAL FINISHES SPECIALIST

You're meeting more than consumer demand when you're manufacturing for the armed services. You're meeting demand that might mean life or death, success or failure for our armed forces.

You can't take chances with a finish for fuel tanks, for instance. For World War II, government specifications called for a finish that would resist salt water, sand abrasion, rain, sun and abnormal wear conditions. It was up to Industrial Finishes Specialists to find the answers. Working with government experts, they developed finishes that helped keep fuel moving to the front. Today they are developing special finishes for just about every type of military equipment, and for just about any type of climatic condition that could be encountered.

And war-emergency research such as this inevitably results in finer finishes for the products that are bought for the home.

So if you're manufacturing for defense orders, consult an Industrial Finishes Specialist. He can help you solve production and cost problems, maintain product quality, whether for defense or civilian needs.



AND LACQUER ASSOCIATION, INC., WASHINGTON 5, D. C.

Hot Synthetic Enamel

USED FOR PAINTING FARM TRACTORS

MODERN FARM equipment needs a colorful and really enduring finish — one that will stand up to rough everyday service and long outside exposure. That means that the paint must have excellent adhesion, and remain reasonably flexible to satisfactorily withstand rugged field duty.

In these days of high costs, economy plays an important part in all manufacturing and finishing operations. Combine quality of finish and economy of application and you will have the reason why we are using hot synthetic enamel.

The enamel we use is formulated for hot application. Viscosity is

By ROBERT JOHNSON, Works Manager, The Massey-Harris Co.

Four spray operators work in this water-wash down-draft spray booth. The paint heaters are located at the rear of each operator to reduce the length of hose required.

controlled at all times. It is not high one day and low the next. Thermostats on the four paint heaters used in the spray booth are set for 165° F. and this heat is uniformly maintained. Our material hose is 23-ft. long from the paint heater to the spray gun, therefore we are assured of a minimum material temperature of 120° F. at the gun, even in cold weather. This means that less solvents have to be added to the enamel, consequently more solids are deposited on the surface with fewer strokes of the spray gun. With less solvent added, less volatiles have to be evaporated; this speeds up the drying of the paint film, not to mention savings in solvents cost.

Hot Application . . . . Lower Air and Fluid Pressures

Another advantage of applying hot enamel is the reduction of air pressure used for atomizing the material; also the fluid pressure. This cuts down overspray. Formerly we used 65 to 75-lbs. atomizing pressure and 15 to 25-lbs. fluid pressure for enamel having a viscosity of 20 to 22-seconds at 78° F., as measured in a No. 4 Ford cup. That was when we used cold enamel. [*To 50*]

For hot application the material is heated to 185° F.; its viscosity (when heated) is 16 seconds, as measured with a No. 4 Ford cup, and it is sprayed at an atomizing pressure of 37-lbs. and 10-lbs. fluid pressure.

Enamel Preheated Before It Goes Through Paint Heater

Enamel is mixed to the correct viscosity in the mixing room, and is brought to a 110-gallon insulated pressure tank located close to the spray booth. This tank is fitted with a power-driven agitator. A pump at floor level pumps enamel from the pressure tank through coils surrounded by hot water in the preheater. Here the temperature of enamel is raised to 80° to 85° F.

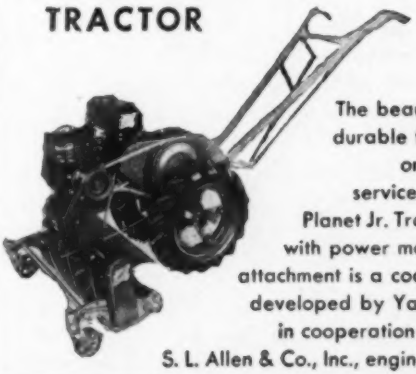
After leaving the preheater, the warm enamel passes through a filter and then into the spray booth where it enters the paint heaters. Here its temperature is raised to 185° F. With tractors leaving the spray booth at the rate of one every three minutes, it is obvious that the four spray guns are open practically all of the time. With an insulated pressure tank and insulated pipes there is little heat loss from the material as it circulates between the spray guns and tank during rest and lunch periods. In other words, the paint is always ready. [*Continued on page 52*]

Name and instructional decals are slid onto varnish sized areas on tractor.

YARNALL-

ORIGINATORS AND MANUFACTURERS OF THE UNUSUAL IN *Industrial Finishes*

PLANET JR. TRACTOR



The beautiful durable finish on this serviceable Planet Jr. Tractor with power mower attachment is a coating developed by Yarnall in cooperation with S. L. Allen & Co., Inc., engineers.

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DIPPING AND SPRAYING ALUMINUM • FLOCK ADHESIVE UNDERCOAT • WRINKLECAST • WOOD AND METAL PRIMERS • SPECIFICATION MILITARY FINISHES • FAST AIR DRY SYNTHETIC FINISHES • YARLITE BAKING ENAMEL • HAMMERCAST • EMBOSSING FINISHES

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INDUSTRIAL DIVISION

PHILADELPHIA 43, PENNSYLVANIA

Cleaning, Masking, Spraying, Oven Drying

Our system of finishing is quite simple. Assembled tractors are brought to the finishing room where all sheet metal parts are hand washed and brushed with a chemical cleaner to remove oil, grease and any superficial rust spots. This treatment is followed by blowing the surface clean and dry with compressed air. Then the entire surface is tack ragged. The tractor is placed on dollies—one at front and one at rear—on which it is propelled by a floor chain conveyor through the spray booth at a speed of 3-ft. per minute. After mounting the tractor on the dollies, masks are placed over the spark plugs, ammeter and oil gauges, rear axles, front wheels and tires.

As tractors enter the down-draft water-wash spray booth, the first two operators spray on a wet coat of red synthetic enamel. After ing) time two other operators spray the second wet coat of enamel.

Upon leaving the spray booth, all masking is removed, and the hub that receives the steering wheel is hand brushed with black enamel. Then the tractor enters an indirect gas-fired oven where the finish is force dried for 21 minutes at 190° F.

After the finish is dry, and before the tractor is removed from its supporting dollies, the various areas to receive decals are varnish sized. There are from seven to nine of these places, the number depending upon the type and size of the tractor. While waiting for the varnish size to become tacky, hubs and keys are inserted and rear axles are greased. Then the decals are positioned, smoothed out and pressed down. Areas surrounding the decals are carefully wiped with solvent to remove excess varnish size. Touch-up work and inspection follows before rear wheels are put on.

Tractor Wheels and Parts Painted Separately

In two separate water-curtain spray booths the clutch housings, transmissions, inside surfaces of crank cases and instrument panels, and the ends of gas tanks are coated; it would be impossible to spray these parts after assembly.

Wheels are cleaned and painted in a separate room. First they are dipped into a hot alkali cleaner and then given a hot-water rinse. They are transferred to an overhead monorail conveyor which carries them to the spray booth. Here they are removed from the conveyor by electric hoist (tractor wheels are quite heavy) and placed on a horizontal axle which is tipped up slightly so that the wheel will remain on the spindle as it is revolved while being spray painted. The finish on wheels air dries before wheels reach the tire mounting line.

Rust Prevention

A new machine for the application of rust preventative coatings is announced by the Cincinnati Cleaning & Finishing Machine Co., Cincinnati 2, Ohio. Designed for the application of government specification No. AXS-673 Corrosion Preventative Compound, the machine sprays the compound on parts, then dries the coating before discharging the parts.

The first of these machines has been installed in a mid-west ordnance depot. A wire mesh conveyor belt carries the parts through the following operations at speeds from 1½ to 3-ft. per minute: loading, oil spray, drain, infra-red drying, cooling and unloading.

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there's no guess when it's a finish by...

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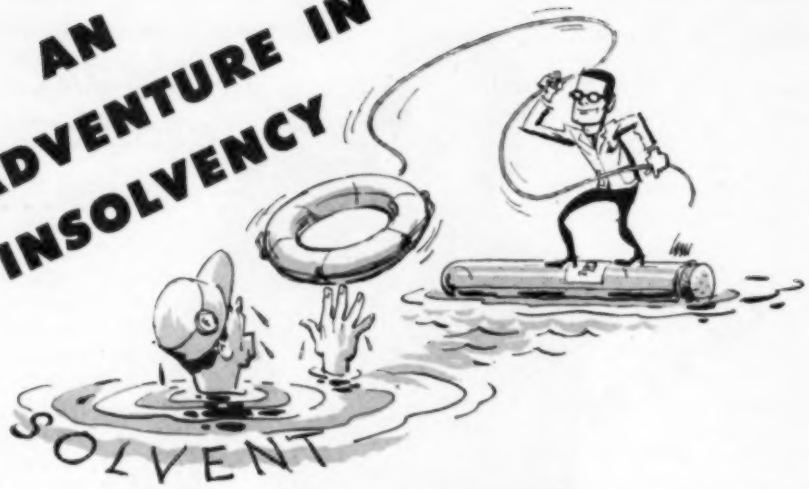
AN ADVENTURE IN INSOLVENCY



Why a thinner may work so well in one paint but ruin the performance of some other good material.

HELLO FOLKS! Let me introduce myself. I'm one of the Smith brothers. D. Barnabus Smith is the name. Just call me "Barney" for short. Never mind what the "D" stands for. I don't remember; after what happened to me the other day, it could stand for "buD" spelled backwards. That's what I want to talk about. Everybody makes mistakes, like I did, but they don't always learn how not to make 'em again. But then, it ain't everybody that knows a guy like Bob Morton.

Bob got me out of a jam the other day and showed me how to stay out in the future; and I always say, when you run across some good dope like that, if you don't pass it along to the next guy, you ain't human. So bend an ear, folks, and I'll give you the yarn.

It all started about two weeks ago. You see, I work down at the Baxter Mfg. Co. We're metal fabricators; make all sorts of things out of all kinds of metals; and, of course, we have to doll 'em up so that you and your wife and all of your relations on both sides will go into the store and buy 'em. That's where I come in. I'm in charge of the Tri-Pi Department. If that's

BY PAUL O. BLACKMORE

Director, Basic Development Labs., Interchemical Corp., Finishes Div.

all Greek to you, it stands for Painting, Plating and Polishing; if you think a lot of it ain't Greek to me, you're crazy. That's why it's good to know a guy like Bob Morton; but I'm getting ahead of my story again.

Solvent Salesman Offers Me A Cheaper Thinner

About two weeks ago I was sitting in my office when Maizie (Maizie's the gal at the reception desk) called to say that Mr. Ruggles wanted to see me and could he come over? Sure he could. I'll see anybody at any time I possibly can. I always say that when a guy's only trying to earn an honest living, help him all you can. Besides, you might learn something someday; who knows?

"Cheap but good. Why not try it?"

Mr. P. Ruggles arrived and presented his card. I guess "P" must stand for "Personality" because I found myself liking Mr. Ruggles right away. He was selling solvents and it seemed to me that he had just the one I've been looking for all these years. Cheap but good. He asked me what kind of paints I was using in the shop, and I told him. He was sure that there were a number of places where his solvent could do a good job. He quoted the price. I tried not to gulp. It was a lot cheaper than the all-purpose solvent I was buying from my paint supplier.

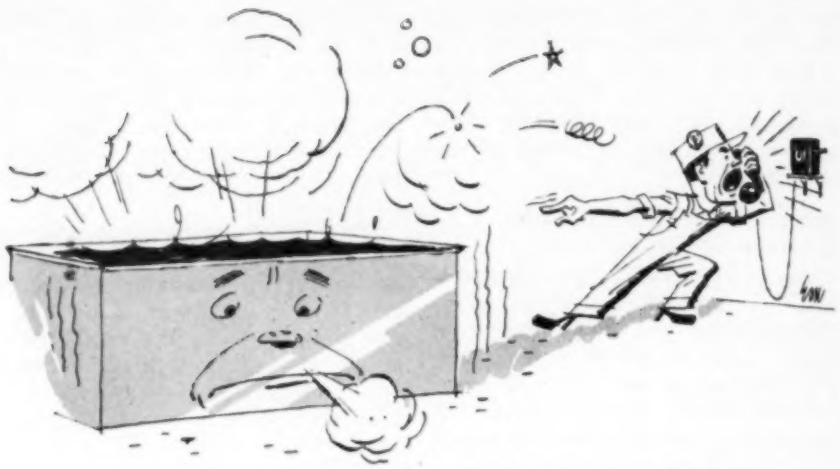
Now I always say that when a fellow sees a chance to save a little dough for his company, it's up to him to do it. It's part of his job—and besides, when the company is doing all right, a little of that dough might find its way back into his own pocket in pay or bonuses. So I thinks to myself, I'd better look into this deal.

Now I'm not a guy to rush in where angels fear to tread. I like to move cautious like until I know where I stand. I've got a dip tank out there with Black Japan in it that we use on a lot of interior structural parts to protect 'em from rusting. The parts aren't seen by the customer, and I figured I couldn't do too much harm by trying Mr. P. Ruggles' solvent in the Japan, so I ordered a drum.

I Try it in Black Japan; Then in Green Enamel

Now I always say that when you try out a new product you should give it a fair shake so I decided to drain the tank, flush it out and start with fresh paint so that the only added solvent would be Mr. Ruggles'. If there was going to be any difference it would be greatest this way.

We made the switch on Saturday. The solvent went in all right. There wasn't a sign of curdling. We started off on Monday morning and, boy,



"Bob, I'm in trouble . . . . olive green tank has kicked out! Hurry. I'm shut down!"

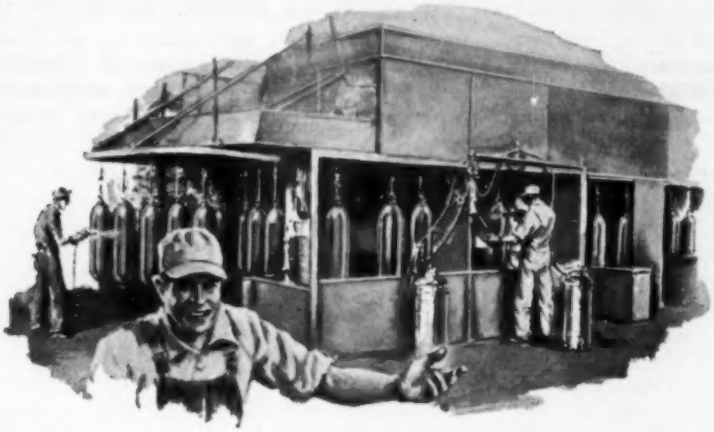
you never saw such flow and such gloss! It was beautiful! Even the boss noticed the difference and gave me a pat on the back when I told him I'd saved about $8.00 on the tankful. I ordered some more solvent from Mr. Ruggles. This went on for two weeks, and I never got better production out of that tank in my life. With that experience under my belt, I began to look around for more places where I could save more money and get better appearance at the same time.

We make card files and a few other business office gadgets that we dip in an olive green baking enamel, so I decided to try that next. This time I didn't drain the tank. I let it go as low as I could and then put in as much fresh enamel and thinner as I could. It seemed to go in all right, but I noticed it took a lot more thinner to get the right viscosity. We dipped some card files, and they looked okay. No better and no worse. I was disappointed that I didn't get an improvement in flow and gloss, but I was still saving money, so we went ahead using the new thinner.

Two or three days later, Joe (he's the straw boss) came in to report that he was having to add a lot more thinner to the tank, and it didn't seem to cut the body very fast. I noticed the green was beginning to look hungry from being thinned too much. This was Friday; I decided that on Monday we'd go back to the old thinner.

Help! It's a Mess . . . . Call Bob Morton

Monday morning Joe was waiting for me at the door. "Boss," he says, "You should see the Olive Green. It's a mess." I rushed over and took a gander. "Joe," I says, "your vocabulary ain't adequate." Mess was no word for it. The green was full of seeds, flat, streaky, and had



Defense Calls for Paint, Too!

"ON TARGET," bombs must be perfect from fuse to fins—in spite of punishment by sub-zero cold, steaming tropic heat, salt spray, sandy winds.

The finish on *any* military equipment is all-important for effectiveness in combat—that is why government finishes "specs" are a problem for the manufacturer with Defense orders. ZAPON can help!

ZAPON not only provides finishes that conform to "specs"—our Customer Service department will help set up your finishing department to fulfill government contracts with speed and economy. This is ZAPON Service From Every Angle.

Service from every angle...

that's

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Stamford, Conn. • North Chicago, Ill.

strings and beads hangin' from every corner and edge. "Mess!" he says, shaking his head sadly. "What'll we do?"

Well I always say that when sickness hits call a doctor; and this was about as sick a dip tank as I'd ever seen. So I called Bob Morton. Bob is Chief Chemist over at the paint company where I buy my stuff. He knows more about how to doctor up a sick batch of paint than any guy I know. Furthermore, he tells you what happened and why, in a way that even I can understand. Of course, I didn't know what to do about it. That's why I always say it's good to know a guy like Bob. I called him on the phone.

"Bob, I'm in trouble. Scrim."

"What do you mean, scrim?" he asks.

"The opposite of scram. It means get here quick."

"I'm practically there," he says, "but give me the low down and a chance to look at my retains."

"The Olive Green tank has kicked out," I reported. "Hurry. I'm shut down."

Bob was here in nothing flat. He and Joe and I walked over to the tank.

"Mess," declares Joe.

"That's the understatement of the year," says Bob.

He got a spatula out of his service kit and watched some of the enamel drain off it. He stuck his nose over the tank and sniffed. He rubbed a little of the enamel between his fingers and sniffed.

"Barney," he announced, "there's something in the enamel that I didn't put into it. Give."

I gave. You don't tell a doctor you have a stomach ache when it's your head that hurts. Why throw him off the track? I wasn't out to hang anybody. I was hung, and I knew it. Now I needed to get out of a jam and fast, and here was a guy that could locate trouble by smelling it.

"Good smeller you've got there, Bob."

"Yeah," he admitted, "I've had it all my life. Come on. Give."

I Confess to Chemist; He Bails Me Out

"I bought some thinner from Mr. Ruggles," I admitted. "Know him?"

"Sure," says Bob. "Everybody knows him. Nice guy. He's with a good company, too. But why?"

"He sold me on the idea that it was a good deal. It did a swell job in the Japan tank and it's a lot cheaper."

"Why didn't you use water?" Bob inquired. "It's still a lot cheaper, readily available, incombustible and non-toxic (they tell me)."

"Come, come, now," I argued impatiently. "Everybody knows water isn't a good solvent. Leave us not be funny. I'm in trouble."

"But leave us be realistic," he persists. "Water is a good solvent if you're talking about things like salt and sugar, but it won't thin a fast-baking alkyd-urea enamel."

"Why won't it?" I'll always go along with a gag.

"There is a good reason. I'll tell you about it later. Incidentally, Mr. Ruggles' solvent won't either."

"I noticed that," I admitted.

"Well," says Bob, "let's get this stuff out, get the tank cleaned up and some fresh enamel in." [*To p. 60*]

CONVEYORIZED FINISHING SYSTEM REPLACES 3 BATCH TYPE OVENS AND DEGREASER IN SAINT PAUL PLANT

Atlas Mfg. Co., St. Paul, Minn., producers of furnace casings and boiler jackets, not only saved about 800 sq. ft. of floor space when they installed this 600-ft. conveyorized DESPATCH Finishing System with ovens on the roof, they eliminated a costly degreasing operation as well.

"The introduction of the burn-off process gives every indication that it will pay for the equipment in operating savings," says the plant superintendent.

The new system, engineered, built and installed by DESPATCH, is rated at 100 cabinets in 8 hrs. It has noticeably increased production and reduced labor costs by about 25%. Here is another example of how increased production, lower operating and maintenance costs are possible with DESPATCH Finishing Systems.

Whatever your finishing problems are, DESPATCH engineers are ready to help you solve them. Write today for Bulletin No. 51E.

DESPATCH
OVEN COMPANY

Conveyor is shown entering and leaving burn-off oven. Ware is degreased by subjecting it to 600° F. for 6 min. Finish bake time is 8 min. at 350° F.

Ware enters and leaves burn-off and finish bake ovens thru single bottom openings.

Unloading takes place at this point where the various pieces are sorted and stacked on trucks ready for packing and shipping.

"Can't," I says kind of glum-like. "I haven't any thinner."

"There are five drums out on your dock by now. I had our truck hurry right over with 'em, and you got some enamel last Friday."

I stared at him. The guy knew this all along. "How come?" I says. "I suppose your nose knows from way over the other side of town!"

"My nose knows nothing. There are other ways to smell out trouble. The records showed that your purchases of enamel and thinner were way out of balance. I guessed at what might have happened."

I tell you the guy's uncanny.

Well, I got the tank cleaned out and going again. Bob said his outfit could sweeten up and clean up the old stuff so we could work it off a little at a time. "For a slight fee," he says. Then we went to lunch, and Bob gave me an earful about solvents, and why they work or don't work. Here is what he told me:

Paint Chemist Tells Me About Solvents

"Barney," he said, "in order to understand why certain solvents dissolve some things and not others, you have to go back and think a bit about how matter is put together.

"Everyone, nowadays, knows about atoms and molecules. Sometimes we wish they'd let us forget. We know that atoms are made up of positive and negative electrical charges. The number and arrangement of these charges in the atom are solely responsible for the chemical and physical differences that exist between the various elements. The ancient alchemists spent a lot of time vainly attempting to convert baser metals into gold. Today, with our cyclotrons and other types of atom smashers, it is at least theoretically possible to bring about this transmutation.

"Since all matter is made of the same stuff (electrical charges) it is necessary, theoretically only to knock out of the atomic orbit those components existing in the baser metals that do not exist in gold. This is not particularly relevant to the problem at hand except that it illustrates and emphasizes the concept of the electrical constitution of matter.

Atoms; Molecules; Motion; Positive; Negative; Neutral

"When two or more atoms combine to form a molecule, if the sum of the positive charges exactly equals the sum of the negative charges, that molecule is said to be neutral, or 'non-polar.' Mr. Ruggles' solvent is made up of a certain combination of carbon and hydrogen atoms, the resultant electrical state of which is neutral. With no residual electrical charges to exert an attraction or repulsion on each other, these molecules are able to move about freely in their environment. All molecules are continually in motion, and the degree of motion is a function of the existing temperature.

"If one could cool a substance to the point known as 'absolute zero,' (—459.72° F.) all molecular motion would cease. As the substance gains in temperature, the molecular motion becomes more and more rapid. Molecules in motion exert

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  CLEAR, TRANSPARENT COLORS OR ENAMELS
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what is known as 'kinetic energy,' and this can be quite a potent force. In the case of liquids, molecules that are near the surface may gain so much momentum that, unless they are otherwise restrained, they may pop right out of the liquid into the vapor phase above it and escape completely. This is what happens during the process of evaporation. The restraining forces working against kinetic energy are molecular collisions and electrical attraction between molecules. Where the latter does not exist or is of a low order, such as in the case of a non-polar solvent, evaporation can take place at a given temperature more rapidly than otherwise, everything else being equal.

"If a combination of atoms does not result in complete neutralization of the electrical charges, then a potential is set up across the molecule, and it is said to be a 'polar.' The presence of oxygen in a molecule usually contributes to its polarity.

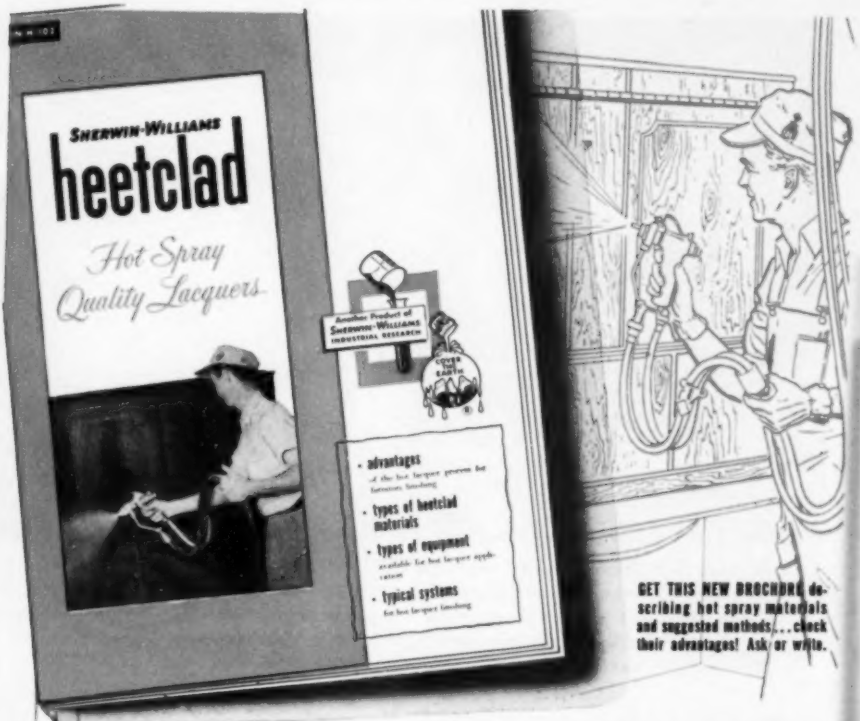
What's in Water, Alcohol; "Like Dissolves Like"

"Water, about which we were joking a while ago, is a molecule H_2O composed of a positive hydrogen atom (H) and a negative hydroxyl (OH) group. It is very strongly polar. As a matter of fact, anything containing that hydroxyl group (OH) will be polar to whatever extent the hydroxyl group represents an important part of the molecule. In the compound HOH (water), it is an extremely important part. In the compound CH_3 CH_2 OH (ethyl alcohol), it is still an important part of the molecule, but the non-polar hydrocarbon group CH_3 CH_2 ethyl is larger than the (H) hydrogen atom in water and tends to subdue the polarity of hydroxyl so that alcohol is less polar than water. As we go to butyl alcohol, CH_3 CH_2 CH_2 CH_2 OH the non-polar butyl group (CH_3 CH_2 CH_2 CH_2) is still larger and still further subdues the polar hydroxyl so that butyl alcohol is less polar than ehtyl alcohol.

"You have often heard it said that 'like dissolves like.' Someone astutely observed that fact long before anyone knew about the difference between polar and non-polar molecules. What they are actually saying is that polar solvents dissolve polar solids and that non-polar solvents dissolve non-polar solids. Of course, certain liquids are soluble in each other too. When two liquids mix, they do so because they have mutual solubility. When they mix only in part or not at all, they have limited or no solubility.

"When two liquids are poured together, the molecules of each tend to arrange themselves so that like portions attempt to approach one another, or, in other words, polar and non-polar groups tend to seek out their own kind. Thus, in water and methyl and ethyl alcohols, where the strongly polar hyroxyl groups are dominant, we find complete solubility, or, as the chemists say, 'miscibility in all proportions.' However, when we get to butyl alcohol, where the hydrocarbon group CH_3 CH_2 CH_2 CH_2 is large enough to subdue the strongly polar (OH) group, we find that solubility of this alcohol in water drops to about 8%, and the two are quite 'immiscible.'

(Continued on page 67)



COLD FACTS on HOT LACQUERS

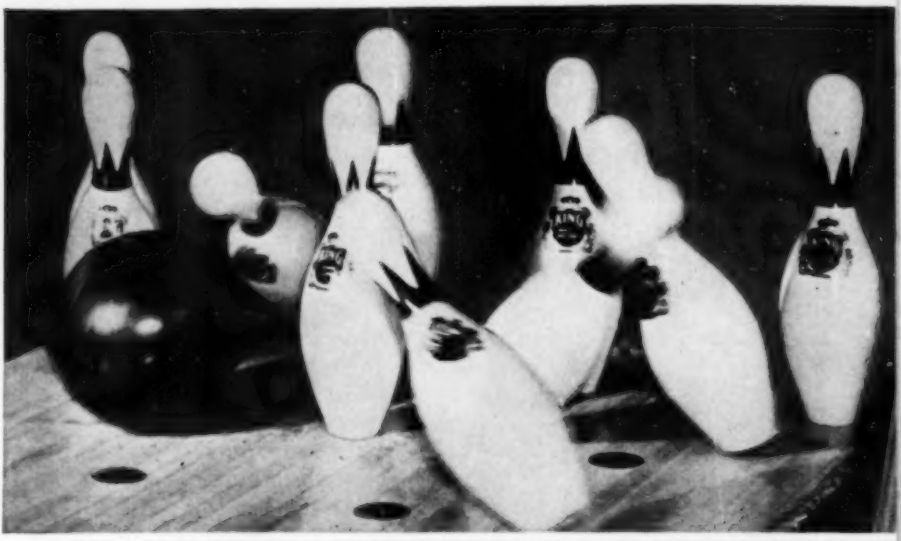
- How to apply them
- Where to use them
- How they save on finishing costs

Does hot spray application offer worth-while advantages in your furniture finishing operations? What are the types of hot spray materials available and their properties? Why are special formulations desirable?

You'll find helpful information on these and other questions in this new Sherwin-Williams brochure. In addition to discussing where and how the hot spray process can be used to advantage, it includes specifications on two lines of S-W lacquers specifically adapted for hot application, together with representative finishing schedules.

If your operations include the finishing of furniture or wood products you'll want this data on Heetclad Lacquers. Ask your S-W industrial representative for a copy or write The Sherwin-Williams Co., Gen. Ind. Div., 101 Prospect Avenue, Cleveland 1, Ohio.

SHERWIN-WILLIAMS
INDUSTRIAL FINISHES



BECAUSE BOWLING PINS TAKE SUCH EXTREME PUNISHMENT, they need a finish that can resist hard knocks without chipping or cracking—added protection against splintering, which destroys the bounce and balance required for perfect play. A special formulation of tough, durable Du Pont lacquer meets these requirements—keeps thousands and thousands of bowling pins in service over longer periods of time.

TENPIN FINISH WITH NINE LIVES

Du Pont Lacquer for Bowling Pins—typical of the 12,000 Du Pont finish formulas working for industry today

• Today the extra life of bowling pins finished with a special Du Pont lacquer is a vital factor in the efficient operation of the country's leading bowling alleys.

The formulation of a finish to withstand the continuous, crashing impact of 16-lb. balls, bowled at hurtling speeds, is the result of alert teamwork of Du Pont and a leading manufacturer.

Whether you seek a finish that makes your product last longer—that adds beauty and sales appeal—that requires special properties to fit some particular need—or a finish that may reduce overall production cost—contact the Du Pont Finishes sales technician in your area or write to *E. I. du Pont de Nemours & Co. (Inc.), Finishes Div., Wilmington 98, Del.*

HOW FAST WILL A FINISH FAIL? The Accelerated Weathering Cabinet gives Du Pont paint chemists a speedy answer on the probable rate of fading and chalking. It exposes finished test panels to the destructive ultraviolet rays of a carbon arc. And to increase the severity of the test, a water spray is played on the panels for eighteen minutes of each two-hour cycle.

EYE-CATCHING SALES APPEAL is making Du Pont DULUX the favorite top-coat finish of more and more furniture manufacturers. DULUX produces a rich sheen of lasting beauty that spells quality to the most exacting homeowner. Moreover, because one spray coat does the job of multiple coats of lower-solids finishes, DULUX can cut top-coat costs by 30%, application time by 50%.

WHETHER THE WEATHER blows hot or cold, these transformers are ready. They've just been sprayed with a coat of DULUX. Especially formulated to resist sudden temperature changes without blistering or cracking, this heavy-duty Du Pont enamel provides years of protection for all types of outdoor equipment. And its high resistance to hard knocks, staining and weathering cuts maintenance costs to a minimum.

DEPEND ON DU PONT FOR BETTER FINISHES

INDUSTRIAL PAINTS • LACQUERS • ENAMELS VARNISHES • THINNERS • STAINS • AND SPECIAL-PURPOSE FINISHES FOR AIRPLANES AUTOMOBILES • FURNITURE • HOME APPLIANCES • MARINE EQUIPMENT • RAILROAD EQUIPMENT • REFRIGERATORS • SIGNS TRACTORS • FARM EQUIPMENT • MAGNET WIRE • VEGETABLE CANS • OFFICE EQUIPMENT

DUCO AND DULUX ARE REG. U. S. PAT. OFF.

DU PONT

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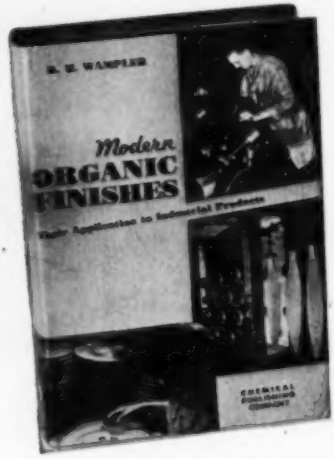
BETTER THINGS FOR BETTER LIVING
. . . *THROUGH CHEMISTRY*

A "MUST" For All Finishers!



MODERN ORGANIC FINISHES

"Their application to Industrial Products"

This book contains 452 pages of the latest information on finishing. It describes modern finishing materials and equipment for their application, drying, conveying, etc., so that the reader may have an overall picture of modern industrial applications. Throughout, the main emphasis is on proper selection and use of materials to get the best possible finish at minimum cost.

It's Complete — Note the Contents

MATERIALS: Oleoresinous and Alkyd Varnishes and Enamels; Cellulose Lacquers; Spirit Varnishes, High Integrity and Specialty Finishes; Stains, Wood and Metal Fillers, and Miscellaneous Finishing Materials.

MODERN APPLICATION METHODS:

Spray Painting; Dipping and Flocoating; Roller and Knife Coating; Tumble and Centrifugal Finishing; Special Processes.

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Conveying Methods.

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SOME GENERAL CONSIDERATIONS:

Good Practice in the Finishing Department; Testing and Evaluating Finishes.

The price is $8.50 and to eliminate bookkeeping we ask that cash accompany order. Sold on a money-back guarantee. Money refunded promptly and without any questions if you are not satisfied.

INDUSTRIAL FINISHING Magazine

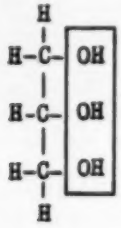
1142 North Meridian Street **Indianapolis 4, Ind.**

Octyl alcohol, with an eight-carbon group $CH_3\,CH_2\,CH_2\,CH_2\,CH_2\,CH_2\,CH_2\,CH_2$ is very slightly soluble, and decanol, a ten-carbon alcohol $CH_3\,CH_2\,CH_2\,CH_2\,CH_2\,CH_2\,CH_2\,CH_2\,CH_2\,CH_2$ is completely insoluble and immiscible. If, however, decanol is mixed with a solvent in which non-polar hydrocarbon groups are dominant, such as xylene [$C_6H_4(CH_3)_2$], they are found to be completely soluble and miscible.

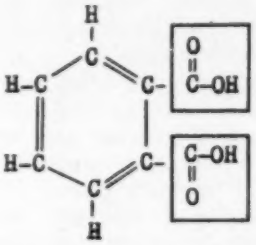
Perfect and Imperfect Mixes; Polarity Conditions

"Sometimes you have noticed mixtures of denatured alcohol and water turn cloudy. This is because the (CH_3CH_2) group renders the alcohol sufficiently non-polar to tolerate small quantities of non-polar hydrocarbon denaturants in solution, but when this solution is mixed with the much more strongly polar water, the non-polar hydrocarbon groups are so violently repelled that they separate out in fine droplets and eventually into a two-liquid layer.

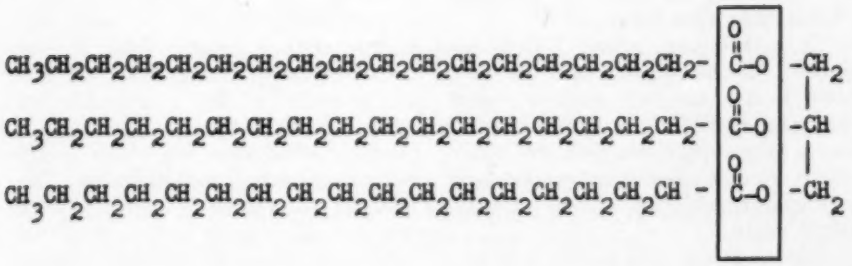
"You cannot reduce linseed oil with ethyl alcohol because linseed oil is composed of three huge chains of 18 hydrocarbon groups each, hooked onto a single glycerine mole-



Glycerine



Phthalic Acid



Typical Vegetable Oil Molecule

Fig. 1—Glycerine and phthalic acid are strongly polar, but when reacted with a vegetable oil, their polarity is radically subdued by the preponderance of hydrocarbon groups. Thus, most alkyd resins are soluble in non-polar hydrocarbon solvents.

cule at the end. Glycerine is strongly polar. Everyone knows that glycerine and water will mix in all proportions. However, when one glycerine molecule is chemically tied up with 54 non-polar hydrocarbon groups (Figure I.), its polarity is so materially overshadowed that it no longer has the power to attract the polar (OH) groups of alcohol or water. Castor oil, on the other hand, has an active (OH) group attached to the 12th carbon atom in each hydrocarbon chain, and these three hydroxyls in this strategic position restore enough polarity to the molecule so that it is readily soluble in alcohol. You see, we always get back to the statement that like dissolves like."

All this time my beer was getting warm and my lunch was getting cold, but I was too interested to notice. I though I was beginning to catch on, but I couldn't quite see what all this had to do with my "gunked" dip tank. I always say that a guy should get things straightened out while he has the chance, and this was it, so "Leave use be more specific," I pleaded. "What does this make me?"

"It makes you wrong," Bob declared. "I was coming to that. You have heard me say several times that the material in the dip tank was a urea-alkyd enamel. In other words, it is a pigmented mixture of a urea-formaldehyde resin and an alkyd resin."

Bob took out his pencil and began to draw pictures on the paper napkin.

"This is urea," he says, "and this is formaldehyde. (see Figure 2.) The (O=C) group is strongly polar and the NH_2 groups are mildly so. So is the (O=C) in formaldehyde. When you react them under certain conditions, you get a compound known as dimethylol urea which is strongly polar—polar enough, in fact, to be highly soluble in water.

Yes, Paint Chemists Know Something About Chemistry

"In order to make this material soluble in organic solvents so we can use it, we must diminish this polarity to a certain extent. We do so by tacking on some non-polar butyl groups, and the butylated dimethylol urea becomes soluble in a mixture of polar butyl alcohol and non-polar xylene. We now have a dual mixture consisting of polar and non-polar resin groups requiring a mixture of polar and non-polar solvents.

"The alkyd resin is composed of glycerine and phthalic anhydride, both of which are strongly polar, and soya bean oil, which is strongly non-polar. The eighteen-carbon fatty acid chains are strongly predominant so that the alkyd resin is completely soluble in non-polar hydrocarbon solvents. The glycerine and phthalic anhydride increase the polarity of the resin molecule enough so that the alkyd resin will tolerate admixture with the partly polar butylated dimethylol urea. The mixture of resins is soluble in a mixture of weakly polar butyl alcohol and non-polar xylene. That is the mixture I was selling you . . ."

"Up to a couple of weeks ago," we both said in unison.

"And again as of today, I presume?" asks Bob with a grin. [*70*]

The experience of Watson-Standard Laboratories in the field of decorative and functional coatings for the Metal Lithographer has been widely recognized.

Their accomplishments include the development of such outstanding finishes as Wet Print Varnishes, Base Whites, Quick Bake Finishes, Gold Lacquers and Blacker Litho Blacks.

These finishes are available in vinyl as well as conventional types.

These are not of standardized formula but are prescription compounded to fulfill the needs of each individual application. The services of our laboratory and field technicians are available to you without obligation. Let us help you with your problem.

Write today.

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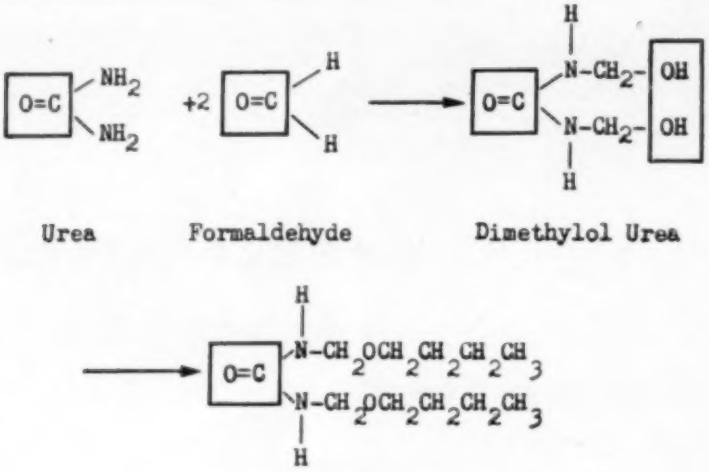


Fig. 2—Both urea and formaldehyde contain the strongly polar C=O group and, when reacted, yield the water-soluble dimethylol urea, strongly polar at both ends. To make this compound solvent-soluble, the polar OH groups are replaced with non-polar CH-2 CH-2 CH-2 CH-3 (butyl) groups, reducing the polarity to only one end.

"See my purchasing agent. You're going to have to do some fast talking to get him to go back to your price after the money he's been saving."

"Has he deducted from that saving the cost of the spoiled enamel, the lost production and the labor and the thinner for cleaning out the dip tank?" Bob wants to know.

"O. K. You win. But you should have brought Eddie along so you wouldn't have to go through this again."

"To bad we didn't think of that," says Bob as he went to work on his lunch.

I was thinkin' hard trying to get this straight in my mind before I forgot part of it.

"I can see the wheels go 'round, Barney. What's bothering you?" says Bob.

"A couple of things," I says. "First of all, why did Mr. Ruggles' solvent work so well in my Black Japan?"

Chemist Explains Mystery of Thinner Performance

"Your Black Japan is made out of asphaltum or gilsonite. It is strictly hydrocarbon and strictly non-polar in nature. Mr. Ruggles' solvent is strictly hydrocarbon and strictly non-polar in nature," Bob replies.

"So they make a beautiful team," I says.

"Sure," says Bob. "A much better team than if you used my blended thinner which is almost too polar to be a good solvent for the Japan, and too expensive anyway. Question No. 2?"

"Yeah," I says, "and think fast

UNDERCOVER AGENT!

Both steel boxes were top-coated with the same high-grade enamel; both had been cleaned thoroughly before finishing . . . but one had been primed with STANTITE. Then both were subjected to a salt spray under laboratory test conditions: after 93 hours the first box showed 75% rust failure—but the STANTITE-primed box showed no film failure after 500 hours!

Besides preventing corrosion and rust creep STANTITE Spraying Primer and STANTITE Clear Primer (for dipping) provide excellent adhesion to all types of surfaces . . . may be used with most types of top coats. Created for application under air-dried or baked finishes, STANTITE dries rapidly, is unimpaired by any baking schedules.

Find out now what STANTITE can do for your product . . . for complete information write today to the Stanley Chemical Company, East Berlin, Conn.

STANLEY

Industrial Coatings

STANLEY CHEMICAL

LACQUERS SYNTHETICS JAPANS ENAMELS

on this one! Why didn't YOU sell me a cheaper thinner for the Japan?"

"Good question," says Bob. "I dont even sell you the Japan so I suppose it just didn't occur to me that the problem existed. Furthermore, we don't sell anything but blended thinners designed for use with a specific end product. You can buy hydrocarbon solvents as cheaply as we can except, perhaps, for quantity differentials. We wouldn't make and sell thinners at all except that we feel it is good insurance that our finishes will perform as intended. You see, every different combination of materials calls for a different solvent requirement, depending on whether polar or non-polar groups predominate and to what extent. We don't determine the polarity of each formulation, but we know from experience what solvents each of those ingredients requires, and we have ways of determining just what solvent combination is best for a given combination of resins."

"How do you do that?" I wanted to know.

Find Out About Thinner By Easy Safe Testing

"Well, for example, you observed that Mr. Ruggles' solvent didn't cut your viscosity very fast. That was a warning that you didn't recognize. We also look for signs of curdling where the thinner is added fast. Occasionally a haze will develop due to poor solvency, or other surface irregularities will appear. Sometimes you can titrate a material with a known non-solvent and see how much leeway you have before the batch kicks out. There are a lot of ways to tell, but that's our job, not the customer's. If you feel that you must buy solvent elsewhere, then you should give us a sample so that we may determine its suitability for use in our products. Thinners are like anything else. You get pretty much what you're willing to pay for. Hydrocarbons are fairly inexpensive. Alcohols, esters and ketones are not. When a blended thinner is indicated, the cost becomes a question of 'How lean can you get without getting into trouble?' We always allow a reasonable margin of safety. It doesn't pay to try to save a dime on solvent and lose a dollar on performance."

"Well said, teacher, and thanks for the lesson. Let's go back to the mines."

We walked back to the plant, and Bob got into his car. He ground the starter for a couple of minutes, and after a few coughs and sputters, the motor decided to start.

"You know, Bob," I says, "it doesn't pay to save a dime on gasoline and lose a dollar on performance."

"Nuts!" grinned Bob, as he drove away.

I always say it's a good guy that can take a joke.

American Electroplaters' Soc. Buffalo Convention, July 30

The A.E.S. will have its convention in Buffalo, N. Y., at the Statler Hotel July 30 to August 2

An application for Housing Accommodations is being mailed to all members of the A.E.S. and other interested persons. Copies may be obtained from the Society's Headquarters, Box 168, Jenkintown, Penna. Early reservations are suggested.

Hot Lacquer News

PUBLISHED PERIODICALLY BY HERCULES POWDER COMPANY IN THE INTERESTS OF BETTER FINISHES AND FINISHING

Angelus Furniture Mfg. Co. Says... "Hot Lacquer Beats Any Other Finish"

Hot Lacquer Gives Angelus Furniture Finishes More "Build" With Fewer Gun Passes

From a 10-acre Los Angeles plant, Angelus Furniture Manufacturing Company is bringing into countless homes Early American Traditional Masterpieces through modern mass production methods. Only recently, this company further stepped up its mass production efficiency, made the quality of its finishes even better—by changing to the hot-spray lacquer process.

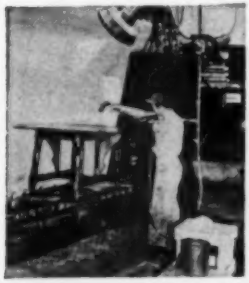
Mr. Henry Grieninger, Supervisor of Finishing Operations for Angelus, is enthusiastic over his company's changeover to the hot-spray lacquer process. Comparing hot lacquer with the regular cold lacquers which Angelus used for many years, and with low-bake synthetic finishes which were also tested, he says, "The most important reason why we go for hot lacquer here is that one coat equals one-and-a-half or even two coats of ordinary lacquer. The high solids in hot lacquer do not penetrate as far into the wood as does cold lacquer during the cooling out process. Consequently, hot lacquer films have an extra 'build' on the surface. This superior surface gives us a better sheen, cuts down the cost of rubbing in some cases as much as 50%. Hot lacquer lays on nicely with much less overspray, and much better coverage. Hot lacquer retains all the advantages of easy 'touch-up' characteristic of cold lacquer and introduces no repair difficulties. We are saving all along the line in finishing material, thinner, operating overhead; and getting fewer rejects, better quality finishes."

Hot lacquer finishes have all cold lacquer's unique combination of properties including fast-dry, ease of sanding and polishing, print resistance, and variety of finishing choices. In addition, Angelus found that its glossy hot lacquer films are much more impervious to cold checking and cracking.

Free Booklets on Hot Lacquer

Hercules offers detailed information on hot lacquer, the types of heating equipment available, and the performance record of hot lacquer in many industries. There is also promotional material that can be used by lacquer manufacturers. Write for copies of current literature.

HERCULES POWDER COMPANY
INCORPORATED
928 Market Street, Wilmington, Delaware



Workman gives a table the gun with hot lacquer.

Front view of main building of Angelus Furniture Manufacturing Company, Los Angeles, California. One of the largest and most complete plants of its kind in the west, the company occupies an operating floor space area of 350,000 square feet.

CLS1-2

MAKE A START TODAY

The winner of the Kentucky Derby next month learned early in life how to start right in order to finish right. This was his number one problem.

One of your major problems is probably also how to start right to finish ahead of your competitors. The choice of the right methods and materials for finishing each product will make the race easier.

Reliance experience, imagination and resourcefulness has helped many manufacturers to speed up sales and cut manufacturing costs.

It costs you nothing to talk it over with us. Give us a call and a competent adviser will see you at once.

For additional information address 4732 Crittenden Dr., Louisville, Ky.

Unevenness in Paint Film

(AIR BUBBLES; CREEPING; BOILING; PITS)

Appearance difficulties that are occasionally mistaken for orange peel in sprayed paint films, what causes them and how to avoid or prevent them.

By WM. BEACHAM

THERE ARE A number of instances where "creepage" and "boiling" are mistaken for orange peel. With your permission I would like to first consider "creepage".

Finishing materials that are sprayed consist of vehicle, drying oils or plasticizers, pigment and extenders. The vehicle is the "body" of the material. Drying oils or plasticizers are included for elasticity. Pigments supply the color. Extenders were originally used to thicken and cheapen the material.

With spray application, extenders are quite important; finishing matetrial that contains no extenders may not spray successfully. To demonstrate for yourself, place a drop or two of water or ink on a piece of level-glass and then touch the surface of the water or ink with the point of your pocket knife. Notice how the water will climb up the knife blade due to the surface tension of the liquid.

If Air Bubbles Break Quickly, Okay; If Not . . . .

When paint is sprayed a certain amount of compressed air becomes trapped within the film and rises to the surface. This escape of entrapped air makes air bubbles but the bubbles break almost as rapidly as they form and the top surface of the sprayed paint levels out to a smooth film.

Now, let us assume that the paint contains no extenders. As an air bubble forms the liquid paint draws toward the bubble, preventing the air bubble from breaking quickly because it is feeding liquids to form a heavier seal over the trapped air.

The air bubble, being at the surface, will cause continued creeping of the liquid toward the high point in exactly the same manner as the drop of water crept up and around the knife blade. When the air bubble finally does break, the surface of the coating has become too nearly set to permit the liquid to flow out and level itself again. As a result there are pits where the bubbles break, and low places between broken bubbles. The appearance is very similar to orange peel.

In the manufacture of paint material the use of a correct proportion of extenders, such as mica dust or whiting, will overcome this trouble. When sprayed, the liquid portion of the paint clings to the extenders and as a result the paint film levels out smooth and dries to form a smooth level paint film.

(Continued on page 76)

A Material That Failed— And Why It Failed

Several years ago a large oil company formulated a wonderful coating to resist the action of acids. It could be made and sold at low cost, but when applied to any surface it would not form a smooth film of uniform thickness. As a result, the uneven film would break down in service. I explained and demonstrated that by adding extenders their troubles would disappear. They would not take my advise, and the coating has died a natural death. I still use their panels to show the importance of using the correct proportion of extenders in paint.

Stirring or Agitating Paint Before Using

When you detail a man to stir or agitate the paint in a container, before reducing the material to spraying viscosity, point out to him the importance of thoroughly mixing in all of the solids or extenders, which have settled to the bottom of the drum. In many industrial plants I have noticed that the operator will give the handle of the paint stirrer a couple of turns and figure that is plenty. The paint in a shipping container should be stirred or agitated for at least half an hour before being used, or before being thinned for use.

Isn't it cheaper to purchase an air-driven agitator or stirrer than to pay a consultant $100.00 a day to point this out to you? I dislike to appear sarcastic, but I do want to call your attention to the importtance of extenders in a paint formula. If they are included in the paint but are left in the bottom of the container, they are of no value, and we are applying to our product a finish which we are not going to be proud of.

Remember, it is the finish that sells the product, therefore we must understand what our fine paint is actually doing, and how we can improve the finish it produces. If our paint standards call for a given wet or dry film thickness, and if creepage occurs, we will have hills and valleys which will prevent an accurate reading of our film thickness gauge or micrometer.

"Boiling" May Result in an Orange Peel Appearance

"Boiling" usually shows in the finish as minute pits or pin pricks, but under certain weather conditions these small pits will spread and resemble orange peel.

Remember sitting in your easy chair at Christmas-time and watching the small candle lights on the tree continuously bubbling? This bubbling is caused by the heat of the light bulb boiling the alcohol in the glass tube or candle, which is under a partial vacuum. Hold the tube or candle in your hand and the heat of your hand may be sufficient to cause the same boiling action. (Alcohol has a low boiling point.)

Spray a wet film of fast-drying paint and you get a similar reaction. Rapid evaporation of solvents from the sprayed coating lowers the temperature in the wet film and, being devoid of air, we have the same conditions as the alcohol in the glass tube. The heat of the article being painted at room temperature or lower is sufficient to set

Speeds sanding of metal surfaces preparatory to priming and final finish

Speed the removal of burrs, grinder marks, and other defects in metal surfaces before priming . . . then sand primer coat to a smooth, level surface before final finish. Sundstrand Air Sanders with *Straight-Line Action* are available in single or double pad models, for wet or dry sanding on flat or curved surfaces, to handle almost any sanding operation on wood, metal, or plastics. See your local distributor or write us today for Bulletin IF-4.

SUNDSTRAND

SUNDSTRAND AIR SANDERS

SUNDSTRAND MACHINE TOOL CO.

PNEUMATIC DIVISION, ROCKFORD, ILLINOIS

The Talk of The Industry

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THE STICK THAT DOESN'T RAISE!

HINTS: Why don't you remove oil spots from new wood with common chalk!

Simply use a stick of white chalk to rub the oil spot thoroughly, then sand the chalk off! A repeated application is seldom necessary.

TRY IT! IT WORKS!

STAR CHEMICAL CO., Inc.

Everything in Wood Finishes

Since 1916

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up a rapid "boiling" action—much faster than the boiling that occurs in the Christmas tree candle. This "boiling" will continue until the surface is too viscous to permit a flowing out and leveling off of the paint film.

What to do to Prevent "Boiling" in Paint Film

So much for the cause of "boiling". Now what's the cure? First, your material pressure may be too high for the speed of the operator, and he is applying too wet a coat. Second, he is holding the nozzle of the spray gun too close to the work, piling on too heavy a coat. The nozzle of the gun should be at least 8-in. from the surface of the work. This explanation may be "long-winded", but by understanding the cause, we find that the cure is simple.

For Cleaning Your Eye Glasses

A new, large size, silicone treated lens tissue and a compact dispenser is announced by American Optical Co., Safety Products Division, Southbridge, Mass. Sheets are 5x6¾-in. in size, packed 800 to a packet; six packets to a carton.

Silicone treated tissues quickly remove from lenses foreign matter such as dust, dirt, lint and smears. The tissues, by depositing an invisible coating of silicone on the lenses, make each wiping last longer and the next cleaning easier and faster.

E. R. Byrnes New Chief Chemist for National Mfg. Corp.

National Mfg. Corp., Tonawanda, N.Y., announces the appointment of Edward R. Byrnes as Chief Chemist of the Paint & Varnish Division, in charge of research, new product development and industrial formulations

For the past three years Mr. Byrnes has been with the Finishes Division of a large corporation in New Jersey and for the 13 years previous was with Durez Plastics & Chemicals of North Tonawanda.

Du-Pros SHELLAC

Strictly pure, of course, and carefully made from fine ingredients, Day's Shellac is trade-marked Du-Pros from the double process which produces the best shellac varnish.

Industrial Finishes for Application by All Methods

LACQUERS
SEALERS
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ENAMELS
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• IN STEP WITH THE TIMES

JAMES B. DAY & CO.
CHICAGO 14

White Filler Wanted

We are trying to locate a supplier for a white filler to be used for filling etched characters on metal. Four or five years ago we used a filler called Maximent No.11 which was quite satisfactory, but we are unable to locate a supplier of this material. There is listed a Maximent Corp., but it seems that their line is cement and various flooring materials.

If you have any ideas as to how we can locate a supplier for this material, or a comparable material, we would be happy to hear from you at your earliest convenience.—*T.M.Co.*

We believe that any one of several concerns can supply such a fill-in enamel. As we see it, the main features are that it have excellent adhesion to metal, have good color retention and that it be a durable coating.

In a letter we are naming a few firms that should be in position to supply a suitable material for your purpose.—*Editor.*

Salt Spray Cabinet

We are in need of plans and specifications for building a small walk-in salt-spray cabinet. If you can furnish us this information or tell us where it can be obtained we will appreciate it very much.—*M.W.Co.*

We have no plans or specifications for such equipment. In a letter we are naming a few individuals and concerns who might help you in some way.—*Editor.*

Stock Letters and Numbers

The article, "Short Cuts in Making Screen Process Stencils", by Milton Grant in February 1951 issue was very interesting. Would you be so kind as to suggest suppliers of stock letter cards and also character cards for this process?—*M.T.Co.*

Please let us know where we can obtain alphabets, as described on page 69 of February issue of this publication.—*E. Mfg. Co.*

We are informed that it's Fototype, Inc., 1414 Roscoe St., Chicago 13, Ill. —*Editor.*

Metal Cleaning Setup

I noticed in the January 1950 issue of *Industrial Finishing*, on page 43, an article entitled, "Metal Cleaning Solved by Specialists".

We are in the process of building a new plant, including a paint department, to manufacture fluorescent fixtures. These fixtures do not require any treatment other than degreasing before painting, as they are all indoor installations.

I would like to know the economies involved in conveyorized vapor degreasers, alkali or phosphoric acid cleaners. Are there any vapor (plus liquid spray) degreasers which do not require tacking or wiping off?

A phosphoric acid cleaner, which we are now using, does a fairly good

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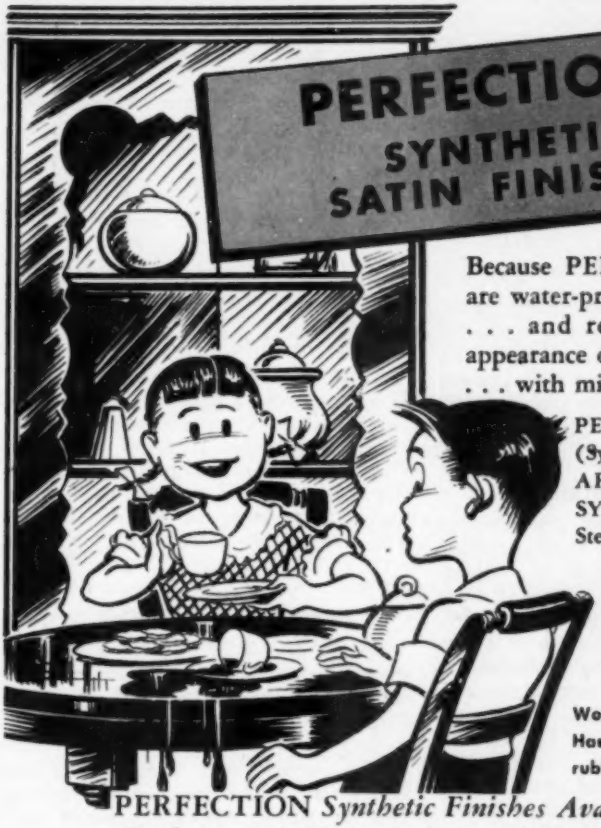

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job but the cost of heating, charging and maintaining the solution, plus the need of one man to blow off all carry-over moisture is very high. We are contemplating putting in a vapor degreaser, but find we would have to tack off all articles.

Could you supply us with any information pertaining to the above, or pass this letter on to someone who is familiar with our problems? As we urgently require this data, it would be appreciated if a letter could be sent to us as quickly as possible. At the same time, could you advise us if there are any installations in Detroit which could be seen by the writer.—M.M. Co. (in Canada).

We are referring your problems to a few of the metal cleaning concerns who have technical men competent to advise you in reference to all phases of cleaning and surface preparation before painting.—*Editor.*

Tumble Coating

About two years ago one of our foremen saw an article in this magazine describing a method of coating small parts by use of a tumbling barrel. The pieces are placed in this tumbling barrel, along with a measured quantity of coating material.

We are interested in securing equipment for doing this work. We would like to know if you can tell us the name of a manufacturer who can advise us about the method and furnish the equipment required.—*D.F.Co.*

In a letter we are giving names and addresses of a few manufacturers of tumbling barrels.

Incidentally, we suggest that you also investigate the possibilities and merits of using a centrifugal whirling machine which coats large quantities of small parts or products by an automatic 2-cycle operation—a combination of dipping and then whirling off the excess paint by centrifugal force. Machines of this kind are advertised in this magazine.—*Editor.*

Finishing in Movies?

We shall be pleased to know if you can suggest sources of films concerning industrial wood finishing which may be rented or borrowed for use in connection with our work-simplification program.—*S.Mfg.Co.*

The Finishes Division of DuPont has them, we understand. Others may have something of the kind but we do not know it at present.—*Editor.*

Copies of I. F. for 22 Years

A file of all I. F. copies for the last 22 years, each in good condition, is in possession of a man recently retired from the Finishes Division of the Du Pont Co. He is willing to sell them. His name and address will be given to anyone interested in buying the entire lot of back copies.—*Editor.*

Animal Hair Flock

Please forward us the source of supply for animal hair flock, as mentioned in February issue, page 76.—*P.B.Co.*

We are not sure which firms can supply it; in a letter we are giving you the names and addresses of several suppliers of flock.—*Editor.*

Sandblast Equipment

It has been called to my attention that an ad appeared in this publication, wherein a manufacturer offered for sale a sandblast air gun, similar in size to a one-quart industrial spray

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gun, this device to be used for sandblasting furniture, small parts of steel and aluminum, etc.

It would be appreciated if you would have the manufacturer of this sandblasting gun send price and literature directly to me at Cocoa, Fla. As an industrial finishing salesman for the A. C. Horn Co., I have had several inquiries as to a source for this type of equipment.—*C.R. Rowlson, Rt. 2, Box 88, Cocoa, Florida.*

Water Dip Lacquer

We need information on Water Dip Lacquer, and have been told that you can help us out. We are especially interested in coating copper-plated parts with a clear coating to keep them bright.—*H.H.H.*

In a letter we are naming a few concerns who can probably supply what you want.—*Editor.*

Patches Will Not Swell

We note with interest, the answer to a question given by Mr. Edwin Hogstrom in February issue, on page 86, with reference to swelling of patches. We would appreciate receiving Mr. Hogstrom's address, as we want him to get samples of our Nu Glo Sticks for furniture finish patching.—*Star Chemical Co., Inc.*

Commercial Finisher's Job

I am sending you a sample wire catch. We have approximately 22,000 of these which we wish to have finished in a white enamel. These are to be used with a fixture that is finished in white baked Dulux enamel. It is important that these wire catches have a good coat and be well covered without any visible thin spots.

This is a special job for us and, as we only have conventional spray gun equipment, I though you might refer this sample to someone who would contract to finish the whole lot. The springs will be ready in about three weeks and we only have a total of six weeks to deliver the first 1400 and the balance in ten weeks.

Anything you can do to help us on this will be greatly appreciated.—*S.L.Mfg.Co.*

We are referring this to a local custom finishing concern and, in a letter, we are naming a few other commercial finishers who might be interested.—*Editor.*

Roller Coating Machines

Do you have a list of the various companies manufacturing Rollacoat equipment? We note that one of your advertisers is the Gasway Corp., but we assume that there are others who make and sell such equipment.—*V.S.Co.*

Yes, there are a few others; in a letter we are naming a few of them. —*Editor.*

I have been assigned from a woodworking industry in Sweden to make a thorough study of lacquer spreaders (roller coating machines) and how to use them in a finishing department.

I would like to know if you have published any articles on this subpect. If you have, would you kindly send me copies of such? Could you also tell me where I can find other literature about these machines and their possibilities?—*Bjorn Stahl.*

We have published several articles on this subject, but the demand for copies of *Industrial Finishing* magazine is so great that we are unable

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to send you any back copies or even tear sheets containing such articles. In a letter we are giving you the names and addresses of a few manufacturers of roller coating machines to whom you might write for information.—*Editor.*

Fluorescent Colors

Would you please advise us the names and addresses of manufacturers of bronzing powders in fluorescent colors, which were mentioned on page 119 of January 1951 issue?—*W.B.*

In a letter we are naming the only two suppliers that we know about.—*Editor.*

Dip-Coating Bottles Again

Referring to the Febuary I.F., page 72 (first letter in first column), we are interested in procuring information concerning the Peacock Spray process which is used for imparting a silver mirror-like finish to glass. Any information concerning this process or other processes used for this purpose would be greatly appreciated. —*R.E.Lamp Co.*

We are presently supplying lacquer for dip coating glass bottles and would be interested in contacting the B.A.Co. if you will be kind enough to pass their name and address on to us.—*Sinnett Lacquer Mfg. Co.*

We notice that B.A.Co. is having difficulty in putting a silver mirror-like finish on bottles. This is to advise you that our company produces a finish similar to this and chrome finishes on metals, plastics and glass. This is done by a high vacuum vaporizing process wherein aluminum is vaporized and plated on to any material within the tank. We sincerely

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believe that this will offer a lower cost than the methods mentioned by B.A.Co.

We would be pleased to receive samples of these bottles that B.A.Co. would want finished in this way, so that we may show what we can do.

If any other reader of this magazine is interested in this process, (metal, plastic or glass) please have them get in touch with us.—*Automatic Radio Mfg. Co., Inc.*

Furniture Rubbing Machines

We are interested in obtaining information on different types of electric furniture rubbing machines. Will you please send us the names of several manufacturers of furniture rubbing equipment?

We are especially interested in machines to be used on rubbing television cabinets and would appreciate suggestions from you as to the type of machine that would produce the best results.—*B.C.*

In a letter we are naming concerns that make and sell portable electric and pneumatic rubbing machines; also the large stroke rubbing-machine.

Jet Spray Cleaning

On page 80 of February 1951 issue, we notice a letter requesting information on forced jet or spraying equipment to be used in conjunction with a stripping process.

I wonder if it would be possible for you to send me a list of manufacturers of this pressure jet equipment. I have run into about the same problem and this information would help me greatly.—*D.W.H.*

Yes, in a letter we are submitting names and addresses of a few manufacturers of such equipment.—*Editor.*

LABOR

Which way is the labor market going?

Are current events affecting your labor situation?

Is manpower again drifting to womanpower?

Is there security for your production regardless of shifting trends?

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Coating for Bakers' Trays

Commercial bread bakers can now prevent hard-to-remove molds and crusts from forming in their dough-proofing trays with a new vinylite resin-based coating. Resistant to both acids and alkalies, the coating gives a non-porous surface to the trays with sections for loaf-size dough portions. These trays hold the dough for a 10 to 15-minute intermediate rising period before baking, during which the flour gluten forms a sticky mass.

Trays coated with the new material need only be wiped out with a cloth to restore their gleaming, glossy surface when the dough is removed. Uncoated trays respond very little to hard cleaning; they quickly accumulate thick mold and crust forms to such extent that chipping or sandblasting is required to remove the scale.

The coating has been successfully applied to the continuous belting used by some bakers instead of trays to carry dough through the proofing process. In this case, the porous canvas belting is treated with a sealing compound before being coated.

Bakers are also experimenting with the Vinylite resin-based material for coating troughs in which bread dough undergoes its first rising period. The coating may be applied by brush or spray and is available in a wide range of standard colors, or it may be pigmented to meet special requirements. — *Bakelite News.*

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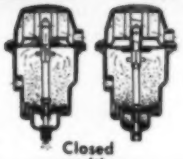

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Spotlight Painting

To reduce eye fatigue and visual tension among machine operators, many industrial plants are now "spotlight painting" their machine tools. This consists of applying a neutral gray to the main part of the tool, and a high gloss buff color to the working areas and moving parts, with a resulting light reflection on work pieces, dials and scales. The effect of this practice has been to promote economy in lighting without sacrificing efficiency. In many instances, it has eliminated or reduced the need for extension lights over the immediate work area of each machine.

Two Veteran Egyptians Honored

A luncheon was given at the New York Athletic Club by Mr. Philip H. Beach, General Sales Manager of The Egyptian Lacquer Mfg. Co., in honor of Mr. George J. D'Aiello and Mr. William M. Vella, salesmen in the Metropolitan area for The Egyptian Lacquer Mfg. Co.

Both gentlemen were presented suitably inscribed watches, commemorating their 25th anniversary, by Mr. L. A. Ruckgaber, Chairman of the Board. A congratulatory telegram from Mr. O. J. S. de Brun, President of the company, was received and read by Mr. L. A. Ruckgaber.

The luncheon was attended by several executives and associates of Mr. D'Aiello and Mr. Vella, who both started with the company as office boys and have worked up htrough the organization to field sales.

Woleben Represents Cowles Chemical Co. in N. Y.

People in metal working industries in New York State are now becoming acquainted with George R. Woleben, recently appointed Cowles Technical Man to handle sales and service work for the Metal Cleaner Department of Cowles Chemical Co. in that territory. Mr. Woleben is qualified to give valuable assistance to the industrial concerns in N.Y.

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Sandblasting Will Do It Without Damage

Referring to the Question entitled, "Cleaning Old Finish From Carvings", in Feb. issue, pages 83 and 86, we notice that in Mr. Ed Hogstrom's answer he discourages the use of sandblasting for this work.

The writer, together with Joseph Sanchez, General Foreman of the Epiphone Co. of New York City, a leading guitar manufacturer, stripped the finish off a guitar recently with a sandblaster known as the "Dust-Free Portable Jet-Action Blast Cleaner". Various tests with different mesh washed sands and various size ceramic nozzles, under different air pressures were made.

We found that a fine silicon sand with a ⅛-in. nozzle did cut away the softer portions of the wood, leaving a rough surface. However with a ¼-in nozzle and a very coarse silicon sand we were able to remove the finish on a 1/64-in. mahogany veneer guitar with so very little roughness to the surface that a few strokes with some No. 8/0 silicon finishing sandpaper restored its former condition.

If you will forward this letter to "K.D." (who made the inquiry) we will be happy to furnish him with this equipment for trial purposes.—*Leonard M. Taylor, President & Gen Mgr. of Pruden Tool Co., Inc.*

Hot Lacquer Bubbles

We would appreciate any assistance or information in regard to our new problem of bubbles developing after application of hot spray lacquer on case tops of large dimensions, such as vanities and dressers.

Bubbles do not develop on the fronts or sides of cases. It seems that this difficulty occurs on flat [top?]surfaces of large dimensions.—*F. & Mfg.*

We have had considerable experience with this trouble and here is what we are able to pass on to you:

Bubbling is caused by either trapped air or trapped solvents, or a combination of both. It occurs only when the lacquer skins over. This is especially noticeable when an excessively heavy film is deposited on the surface at one time. That is why you are getting it on the tops but not on the sides of your dressers.

It can be remedied by a number of ways. One is to make a slight adjustment in formulation of material to keep the film "open" a little longer. If this should be impractical, you can partially remedy the trouble by using higher atomozing air pressure or by using an air cap (on the spray gun) with multiple orifices.

Increasing the temperature of the paint heater will help also. However, it is advisable to not go over 175°F. for fear that you will reduce the cold check properties of your lacquer.

Obviously also, your finishers should be instructed to not concentrate so much on the upper surface of the dressers. It may be advisable, also, to check the method of filling and sealing the tops of your dressers. In some cases, bubbling has been traced to an improperly treated wood surface.—*James A. Bede, President of Bede Products, Inc.*

Naturally this can be caused by any number of things, from formulation to application. The most logical, though, is application, since there is no trouble on the sides and front. It is only natural for the spray man to apply more material on the tops than elsewhere—and it is only human to fail to hold the spray gun at the correct distance and at the correct angle when spraying tops.

The most common errors that cause bubbles or air pockets—that is, insofar as I have found—are:

1) Spray gun out of adjustment.

2) Wrong orifice in gun for heavy bodied materials.

3) The gun not being held at right angles to the work—in other words, held vertical (pointing straight down) when spray flat tops of furniture.

Check the spray gun adjustments and see that the correct fluid tips and needles are being used.—*H. Hardesty.*

Look E. H.! Brushes

We have always read *Industrial Finishing* magazine very carefully and note with interest many new ideas and thoughts, and have written to manufacturers of new types of merchandise which seem to be of interest.

On page 84 there is an answer to a question about cleaning old finish from carvings. The writer goes through a long preamble, on the types of wire brushes, etc. We publish a book on brushes and on pages 314, 318, 320, 324, 326, 328 and 378 we show 6x9-in photographs of the type of brushes used by the furniture industry for cleaning and rubbing, and in particular we show one brass wire cleaning brush, No. 5008.

We are enclosing sheets showing these particular brushes and believe that it should be of particular interest to Mr. Ed. Hogstrom to know that brushes for that type of work are manufactured and are available to industry.

We would be only too pleased to have our brush book in the hands of

A few of the brushes suitable for cleaning old finish from carvings. One (lower left) is a wire brush; others are hair bristle.

well established reasonably large buyers of brushes. A brush book like ours costs us over $4.00 per copy to publish; nevertheless we offer this information solely as a service to you and your organization.—*H. Behlen & Bro., Inc.*

Rubbing, Buffing, Polishing Furniture

I have read the articles on rubbing and buffing in November and December 1950 issues of this magazine and have found them to be very interesting. I would like to have some additional information on the speed and size of the buffer and also the type of buffing compound to be used, and the source of supply.

Recently, in my capacity as a finisher, I have had difficulty in matching the mirror-like finish on a black suite. Our shop is equipped with spray guns and we use —— lacquer*. We also have a —— No. 1000 sanding and rubbing machine*. With this equipment we have been able to produce a high gloss finish on walnut and mahogany, but have been unable to remove the very fine hairline scratches and match the original finish on the black suite mentioned above. Could we accomplish this by buffing? If so, what kind of buffer and compound would you recommend? Would it be possible to use a buffing pad on our portable drill which has 2500-rpm's.?—*A.G.E.*

The resin content or proportion in your lacquer should be fairly high to produce a hard film or finish coating, as you must have a hard film to get a really high polish.

To remove the small hairlines, finish the wet sand operation with No.5 or 600 sandpaper; then use the heavy S——machine* as directed, with rottenstone, as described in my article, "Finishing Furniture in Canada", December 1939 issue. The rottenstone will remove any scratches or lines on the surface. No buffing compound need be used with the buffing operation. Clean the surface with alcohol and water; use an electric or air buffer with wool bonnet, running at a speed of 1500 or 1600-rpm. and keep it moving. Result, a mirror finish.—*Fred Boynton.*

The flat areas should first be cut to a smooth surface by using a S—— (heavy) rubbing and sanding machine*. Use No. 400 wet-or-dry sandpaper on this machine. Use a very thin-bodied lubricant such as "No Haze Rubbing Oil"*. Bay Oil D (Standard Oil Co. of N.J.) also works very well as a lubricant for wet or dry sanding.

Next follows a final sanding with the above mentioned machine and lubricant, but use No. 500 wet-or-dry abrasive paper. This will remove the scratches made by No. 400 abrasive paper. This paper (No. 500) does not cut as fast as No. 400, hence the No. 400 is used for the first sanding operation.

The sanding operation should be followed by a thorough rubbing with a heavy S—— rubbing machine (approximately 30-lbs. in weight) fitted with felt pads. Use, as an abrasive, one part "Easy Rub"* and one part rotten stone. The same lubricants mentioned in preceding operations may be used.

Another method widely used is to substitute 3M Machine Compound for the abrasives and oil just mentioned. This compound can be used with the same machine and it makes an excellent fine abrasive where a high polish is desired.

Follow either of the above operations by hand rubbing all surfaces with a fine hand compound*. Use a soft pad to which the compound is

applied (after it has been reduced with water to the consistency recommended by the manufacturer). Care should be taken so that your polish strokes are always with the grain of the wood. This compound removes all traces of abrasive marks left by preceding operations.

Next follows the buffing operation. This should be done first with a slow speed wheel and a coarser buffing compound; then followed by using a faster wheel and a very fine buffing compound.

I suggest using a No. 7 pad* and an air-driven buffing machine (1500-rpm.). Use, as an abrasive, a coarse buffing machine compound which can be reduced to the proper consistency with water.

For the second buffing operation I suggest using a 2100-rpm. machine of the same make*. Use a lamb's wool pad on this machine. Use, as an abrasive, a very fine buffing compound.

The method outlined here should produce a mirror-like finish on either lacquer or urea type top coats. In order to further enhance the beauty of the finish and to make it fingerprint-proof, many furniture manufacturers are using, as a final operation, a water-resistant furniture polish such as "Anti Haze" Furniture Polish*. This also eliminates bluing or hazing of the finish after it has set for a few days.—*H. W. Chester.*

*Names of materials and machines will be given by letter, on request.—*Editor.*

DuPont Appointments

Appointment of John W. Nestor as assistant manager of the Finishes Division of the Du Pont Company, succeeding the late M. A. Dibble, has been announced by Matt Denning, manager of the Finishes Division.

Simultaneously, it was announced that Joseph B. Dietz, former manager of industrial sales, becomes assistant director of sales, and William P. Fisher, formerly assistant manager of industrial sales, now becomes manager.

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(Patent Applied For)

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Complete Wood Finishing Equipment and Supplies

Metal Finish on Wood

On account of shortages in steel for making metal caskets, we are giving some consideration to making wooden caskets and finishing them like metal. The main thing that interests us is in a prime coat that we can use on lumber that will have some knots in it.

We are now making finished hardwood caskets, but this takes clear lumber. We want to know how we can finish lumber that has some knots. *B.W.Co.*

Any wood, even with numerous knots and cracks, can be utilized although better quality lumber should more than pay for itself in labor saved from patching and filling cracks and holes.

Knots, because of the rosin that is in them, are the most difficult to finish. For this purpose there are prepared knot sealers, or one can use the old standby, shellac. Prepared crack filler can be used for filling in openings around knots and cracks in the wood.

If the casket is to be finished in a smooth metallic finish, one or two coats of primer surfacer should be used before spraying on the metallic coat. If the casket is to be finished in the now popular stipple finish, there is no need for the surfacer coats. I will give you both procedures. First, the smooth metallic finish.

1) Go over the entire casket with crack filler and putty knife. Press crack filler in firmly and leave a small surplus on the surface.

2) After the patching material is thoroughly dry, sand the patches down to a level with adjoining surfaces. Spot patch the knots here.

3) Spray on a wet coat of a lacquer primer surfacer. Cover the

patches a little heavier than other surfaces of the casket.

4) After allowing enough time for the surfacer to dry so that it will "powder sand", sand the entire surface to make it smooth. There will probably be a number of "sand-throughs", as the patching spots may shrink slightly and the wood will not be entirely uniform throughout. Blow off and wipe off the lacquer dust which has been produced by sanding

5) Spray on a double wet coat of lacquer primer surfacer all around.

6) After the surface is thorougly dry, sand as before and inspect for pinholes and hollows. Remember, the smooth polished metallic coat will show up any and all small defects. Spot patching can be done here if necessary.

7) Spray metallic coat.

8) Spray on two or three coats of clear rubbing lacquer. Allow time for drying and then polish.

For a metallic spatter finish on wood caskets, I suggest the following procedure:

1) Patch holes, cracks and hollows with crack filler. Leave slightly more on each spot than is necessary, to allow for shrinkage.

2) Sand patches smoothly, to level them with adjoining surfaces. Spot patch here with knot sealer or shellac.

3) Spray on wet coat of lacquer sanding sealer. Allow drying time. Sand smooth.

4) Spray on a coat of spatter finish in any pattern desired and let it dry.

5) Spray on the metallic finish.

6) Spray one or two coats of clear gloss lacquer. Do not rub, as the highlights of the spatter finish give a highly polished effect.

The second finish is being used more now because of steel shortages and because the spatter finish has the property of hiding a multitude of sins. Also, it goes a long way and is

NITRO-STAN
Wood Finishes

Stains
Fillers
Sealers
Enamels
Undercoats
Topcoat Finishes

Color Cards on Request.
Inquiries Invited.

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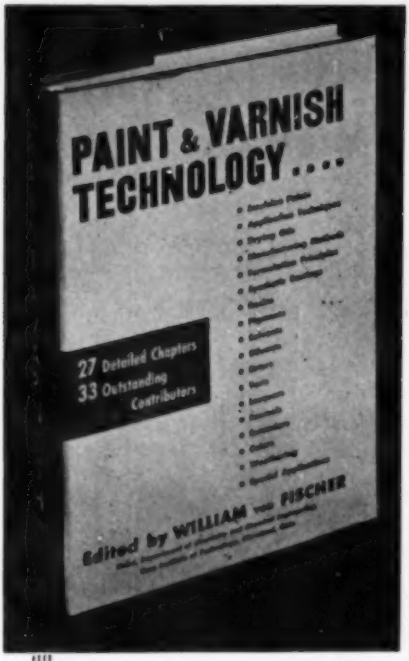
WOOD BLEACH
This single operation, controllable, Patented Bleach

- Requires No Neutralization
- Does Not Raise the Grain
- Leaves No Deposit
- Wood Is Left Neutral
- Economical . . . Dependable

Gallon Unit makes two gallons of bleaching solution. Application by spray or synthetic rubber sponge. Wood is ready for finishing in less than two hours.

Delivered prices quoted on request.

Spe-de-way Products Co.
manufacturers
3639 N. Columbia Blvd., Portland, Ore.



505 pages, illustrated
Price.....$8.00

This is the first comprehensive one-volume presentation of the chemistry, formulation, manufacture and applications of paints, varnishes, lacquers and enamels. There is a wealth of information on such subjects as exposure tests, viscosity, film properties, hiding power, special applications and surface preparations. A valuable addition to your personal library. Send for it NOW!

For immediate delivery, order from:

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1142 N. Meridian St., Indianapolis 4, Ind.

quite reasonable in price. It dries for recoating in about four hours, and the pattern of design can be adjusted by the operator.—*Ed. Hogstrom.*

Sanding Wears Away Worker's Finger Tips

We are doing a considerable amount of wet sanding in our finishing department and have run into the problem resulting from the sandpaper rubbing clear through the skin of our employees' fingertips. Leather finger protectors and gloves are out. Can you or any of your readers recommend anything to protect the skin from this punishment?—*C.C.Co.*

I believe that the self-adhering gauze known as regular Gauztex, manufactured by General Bandages, Inc., 531 S. Plymouth Ave., Chicago, Ill., in 1-in. widths, 15 yards long, will solve your problem. This gauze, as the name implies, may be bent around the end of the fingers and pressed down. It will adhere to the fingers and itself, even over the ends of the fingers.

I have seen this gauze used for dry sanding of sealer coat by girls in furniture factories. After examining the gauze (it is sticky) I see no reason why it should not give the same results in wet sanding, whether or not they use water or a petroleum liquid in wet sanding.

Here's one thing that a certain furniture firm discovered: They had to "charge" each girl with a box of bandage; no money was involved—just a record of when she drew a roll. Rolls of bandage were going fast; they were probably being used at home on many little brothers' and sisters' cut fingers. After putting in the charge system, the rolls of gauze lasted longer.—*J. Martin.*

Trouble, Patch Finishing

We manufacture caskets. Our problem concerns the refinishing of units that have been finished for some time. The casket has been completely finished—cleaned, primed, sanded, ready mix color coat lacquer applied, hot lacquered and polished (no wax).

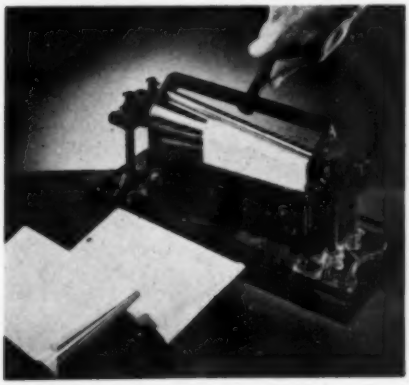
The following is the procedure for refinishing a small place on one of these caskets:

1) Area cleaned off with thinner.
2) Mask; sand with 320A sandpaper.
3) Prime and dry thoroughly.
4) Sand ready for color.
5) Color and dry thoroughly.
6) Apply clear finish (hot lacquer or cold lacquer).

After the clear coat dries, small grooves or scratches appear below the clear coat and range in length from one inch to three or four inches. These marks run in different directions and may appear where no sanding was done. What causes these marks? How can this be eliminated without resorting to stripping?—*B. Casket Co.*

One of our experts reports that he has had this same experience; that under a magnifying glass these "scratches" are really hair-line wrinkles. He declares that it is in the prime coat, and recommends that you consult your supplier of finishing materials and perhaps have the prime coat slightly changed in formulation so as to avoid this trouble.

If your supplier of finishing materials has an experienced technical service man, he will be in position to diagnose your trouble accurately and prescribe an economical and certain remedy—and do it quickly.—*Editor.*



This conical mandrel roll provides a reliable means of comparing the adhesion and flexibility properties of two paint films. Panels are bent around the cone which varies from 1/8 to 2-inch radius. The panel at left shows separation of one well known type of paint film from the surface, while the Plaskon silicone alkyd film on the right panel shows no cracking or lifting. Both panels (foreground) were one coat applications. Photograph, courtesy of Plaskon Division of Libbey-Owens-Ford Glass Co., Toledo, Ohio.

Penna. Lacquer Center has 15th Anniversary

Pennsylvania Lacquer Center, 145-147 N. 4th St., Philadelphia 6, Penna., celebrated its 15th anniversary in the protective coating business on March 6, 1951. The company started in business on March 6, 1936 and has made remarkable progress in the past 15 years. On March 1, 1948, the company opened a new plant of 15,000-sq.ft. in a one-story building at 131 Berlin Road, Haddonfield, N.J. Additional storage space of 55,000-sq.ft. is included with this plant. At the present time the company is putting up a large structure for storage of pigments and tin cans.

Pennsylvania Lacquer Center manufactures "Wonder-Lac" industrial finishes and a line of automotive primers, blacks and lacquer thinners. Its industrial line includes lacquers and synthetic enamels in air dry and bake finishes for lamps, toys, furniture and numerous other wood and metal products.

Harry Griver started this business and is still the sole owner. Except for two years in the 77th Division, 307th Infantry, he has been constantly handling the entire sales and advertising policies of the firm.

At the new plant the laboratory facilities are in charge of Joseph DiMauro, Chemist. Joseph Bongiorno is Plant Supt.

In addition to its line of industrial and automotive finishes, the concern and its distributors in 38 states handle nationally-known brands of sandpaper, flock spray equipment and compressors.

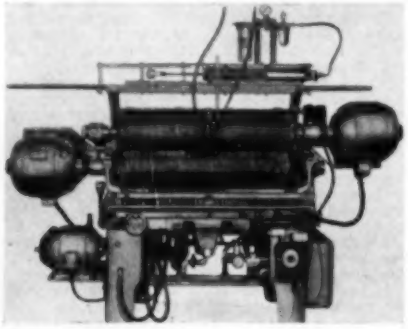
Materials Supplies Equipment

Buffing, Polishing Machine

Both surfaces of either flat or contoured items may be finished (buffed or polished) to any degree from flash removal to mirror finish by the Model 202 Surface Finishing Machine recently introduced by Clair Mfg. Co., 1008 S. Union St., Olean, N.Y. Designed to provide automatic float of buffs at any predetermined uniform pressure, this machine is claimed by the manufacturer to be exceptionally versatile.

The machine has two spindles to accommodate rolls 40-in. in width and up to 9-in. in diameter. The automatic hydraulic "in" and "out" stroke is adjustable from ¾ to 24-in. A bar mounted across the front serves to open the rolls and arrest all actuation for loading or as an emergency measure.

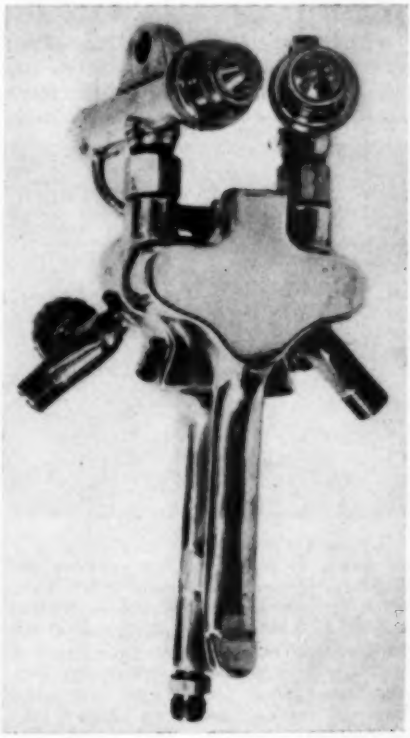
A wide variety of optional features includes choice of horsepower, variable speed controls, automatic cycling devices and other modifications.



Suited to a wide variety of work.

Polyester Spray Gun

Schori Process Division, of Ferro-Co Corporation, 8-11 43rd Road, Long Island City 1, N.Y., has just developed and placed on the market a new paint-type spray gun that sprays two solutions at the same time. The gun



Each nozzle sprays a different material—for external mix and rapid drying after the mix.

was developed to handle materials that are stable in themselves but that cure quickly only when mixed with other materials. Formulations can be sprayed that will be tack-free in ten minutes. If these formulations were mixed in a single pot, and sprayed through an ordinary spray gun, the material would set in the pot even before it could be sprayed.

The Schori unit uses two pots and a spray gun with two nozzles. This keeps the two solutions apart until they are mixed "externally" as the material is atomized.

The following is an example of how the equipment is used with Marco polyester resins. One-half of Marco MR-28C resin in which Marco catalyst has been dissolved is placed in one tank, and the other half of the resin is mixed with Marco accelerator and placed in the other tank. The resin-catalyst blend will remain stable for at least one working day and the resin accelerator blend for considerably longer. The catalyst resin and the accelerator resin are mixed beyond the two nozzles which are provided in the gun. This permits the use of comparatively large proportions of accelerator, which results in extremely rapid gelation—about three minutes or less at 70°F. while maintaining long pot life of the material in the tanks.

Chromium Plate Direct-on-Steel Protected by Clear Coatings

The unavailability of copper and nickel has forced many manufacturers to resort to the procedure of plating chromium directly on steel. Without its customary underlying platings of copper and nickel, the chromium requires a protective coating to assure durability.

Such protection is readily obtained through the use of either one of two clear coatings that have demonstrated exceptional durability, according to Maas & Waldstein Co., manufacturer of industrial finishes, Newark, N. J., Chicago, and Los Angeles.

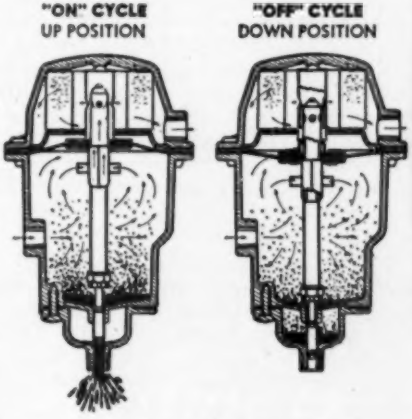
The two coatings are an air drying finish, known as Dulac Clear Universal Lacquer No. 462, and a baking finish, known as Codur Clear Synthetic Y743.

Reports by an unbiased laboratory show that both these clear coatings withstand salt spray and weatherometer tests for the remarkable period of 800 hours without any evidence of failure.

Detailed information on Dulac Clear Universal Lacquer No. 462 and Codur Clear Synthetic Y743 may be obtained from the Newark, N. J., Chicago or Los Angeles Divisions of Maas & Waldstein Co.

Clean Compressed Air Lines Automatically

A newly engineered line of valves for automatic removal of contaminants and precipitates from compressed



Cross section view of Wilkerson diaphragm operated valve.

air lines, after-coolers, sumps, tanks and air brake systems has been announced by the Wilkerson Corporation, 1749 S. Broadway, Denver, Colorado.

Claims made for the equipment include *elimination of manual attention or adjustment as well as remarkable savings in man-hours*, critical maintenance materials, air tools repair parts and pneumatic machine replacements. The line includes automatic separators and drains which have been field tested in hundreds of industrial installations as well as on truck, bus and railroad locomotive equipment.

The cross sectional view shows the diaphragm operated valve. When air line is not in use the diaphragm is forced down by back pressure with the O-ring sealing the sump bottom. As air is used the pressure differential raises diaphragm and shaft, seals bottom of middle chamber, opens bottom of sump and blasts out contamination.

A full line catalog and demonstration is available from the company on request.

New "Hot-R-Cold" Lacquer

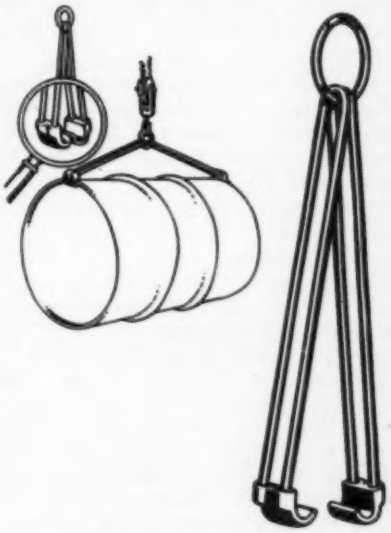
A newly developed 35% solids clear lacquer that can be sprayed either hot or cold, without any thinning, is announced by V. J. Dolan & Co., 1830 N. Laramie Ave., Chicago 39, Ill. In other words, it can be sprayed as is at room temperature or it can be run through a paint heater and sprayed at an elevated temperature. It is identified as No. 2100 "Hot-R-Cold" lacquer.

This new lacquer flows out readily and produces a perfectly smooth film of uniform thickness. The resulting film is light in color, exceptionally tough, dries quickly, has excellent cold-check resistance, and can be rubbed to any sheen desired.

A lacquer sealer to use under it is identified as No. 2150.

Drum Lifting Hooks

The Morse Mfg. Co., 122 Dickerson St., Syracuse 2, N.Y., has recently improved upon its Model No. 41 Drum Lifting Hook. The hook is now stronger but much lighter.



Lifting capacity, 1000-lbs.

This particular hook is designed primarily for lifting steel drums, although it may be used for barrels. It consists of double steel rods, malleable steel hooks and a welded ring.

Silicone Alkyd Resins

Three silicone alkyd coating resins have been announced by the Plaskon Division, Libbey-Owens-Ford Glass Co., Toledo, Ohio, as the first chemically combined silicone alkyds resins, commercially available.

Silicone alkyd resins are expected to find wide use in military applications because of their important properties, particularly heat resist-

Form-A-Roc • *FIRST COAT*

FOUNDATION FOR FINE FINISH

1. Dries with lacquer speed.
2. Has double lacquer solids at spray gun.
3. Fills very well—sands easily.
4. Adheres tenaciously to steel, wood, presdwood, aluminum, galvanized metal, etc.
5. Holds out lacquer, synthetic or oleoresinous enamels exceptionally well.
6. Thins 3:1 with xylol.
7. Available in GREY, SALMON and OFF-WHITE.
8. Ground well to smooth texture.

MADE BY

THE VARNISH PRODUCTS COMPANY

5206 Harvard Avenue — Cleveland, Ohio

FASTER REFINISHING WITH *ELECTRO* COLD STRIPPER

▸ No more long waits while slow-acting paint removers do their work like a team of lumbering oxen. Simply dip the article into Electro Cold Stripper and—Presto!—you can see the old finish literally "pop off" before your eyes. Wash with a pressure stream of water or wipe well with rag and REFINISH IMMEDIATELY. No fuss, no waiting, no bother.

▸ Used cold. Non-inflammable. Non-injurious to hands or metal when used as directed.

▸ Removes paints, enamels, synthetics, lacquers and wrinkles in minutes—not hours. Especially effective on hard-to-remove baked-type finishes. Will not harm even precision finished aluminum, copper, brass, magnesium, zinc, steel, cast iron or their alloys in time required for removal of paint film.

Write for sample and quotations—or order 5 gallons at drum price.

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2641 W. GRAND AVE. · CHICAGO 12, ILL.

ance, and including excellent resistance to weathering, humidity, chemicals and salt spray; plus satisfactory performance under widely varying climates.

Other than the high heat resistance that is an usual advantage of silicone products, coating films formulated with silicone-alkyd have remarkable hardness, abrasion resistance, adhesion and flexibility, plus a high degree of resistance to solvents, acids and alkalies. Of considerable importance also is the fact that the resin retains these properties over a wide range of temperature.

The heat resistance of silicone-alkyd films is considerably higher than most purely organic films. They maintain high gloss and stable color in the range of 400° to 500°F. in the case of ST-856 and ST-873; and the ST-881 resin for aluminum finishes shows no failure of film properties at temperatures as high as 1500°F.

Hardness, abrasion resistance, adhesion, flexibility, resistance to organic solvents and strong acids—all are reported to be high.

Conveyor Coats Metal Parts

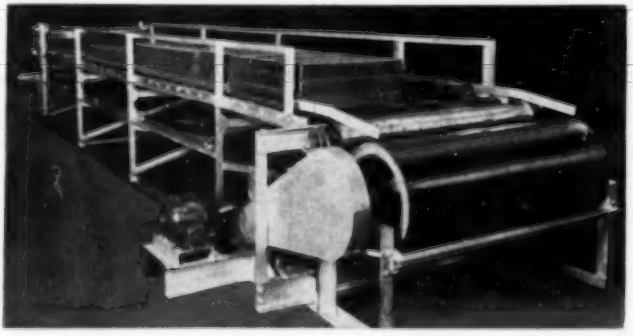
Designed primarily for coating and drying sheet metal, the unit illustrated here can also be adapted to handle flat parts. Metal sheets are pulled by power on a large steel roller. A machine applies the coating at the start of the conveyor. Both sides of the sheet steel are coated simultaneously. As the coated material moves down the conveyor, a series of infrared lamps dries the coating by the time the metal reaches the end of the line. The entire cycle is automatic. The framework is of structual steel, bolted and welded. It is a product of The Klaas Machine & Mfg. Co., 4327 E. 49th St., Cleveland 25, Ohio.

Protects Shellac from Iron Containers

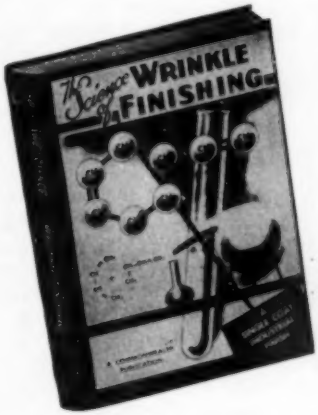
Development of an inhibitor to protect shellac and other non-aqueous liquids from metal contamination is announced by Monsanto Chemical Company's Merrimac Division in Everett, Mass.

H. J. Heffernan, Merrimac general sales manager, said that the new product, Inhibitor 038, is especially valuable in view of National Production Authority restrictions on shellac containers.

"The new inhibitor prevents iron pick-up," Mr. Heffernan continued, "by forming a thin coating of a complex iron phosphate on the inner wall of the container. The reaction prevents the metal from becoming soluble in the shellac."



A roller conveyor type of machine for coating and drying flat panels and sheet stock.



NEW! NEW! NEW!

The Science of
Wrinkle Finishing

A SINGLE COAT FINISH

A Sure Guide To More Efficient and Cost Reducing Industrial Finishing

The first fully authoritative book covers modern Wrinkle finishes from all angles . . . It tells in layman's language, but technically correct, what the formulator must do to produce a soft, suede-like finish, or a high metallic gloss.

The "Science of Wrinkle Finishing" is well illustrated, in color and black and white. Both actual size and magnified photographs are included to show the many variations of textures possible to attain with these one-coat finishes. Preparation of the surface (little or none is needed with "Wrinkle" finish, making it the most economical industrial finish), spraying, drying and baking are all described in full. The application to flexible materials such as paper, fabrics and wood are also dealt with and described clearly.

Technical data on polymerization and on drying oils, not heretofore available, are given special attention.

A BOOK WHICH INDUSTRIAL FINISHERS HAVE BEEN WAITING FOR

SOME OF THE SUBJECTS COVERED:

ORIGIN OF WRINKLE FINISH

How it was started
How to control characteristics
What is "crystal" finish
What is crystallizing lacquer

SPECIAL PATTERN FORMULATIONS

How to make patterns
How to blend for formulations
Where are various finishes used
What oils are used for different formulations

APPLICATION

How to apply "Wrinkle"
What temperature to use
What equipment necessary
How long to bake
What are the controlling factors
What is the most effective means of application
What is the viscosity of oils for applications
How to attain the finish desired

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GLOSSARY OF TERMS

Price $5.00 (Money Back Guarantee)

INDUSTRIAL FINISHING Magazine

1142 North Meridian Street **Indianapolis 4, Ind.**

Synthetic Gold Enamel

Manufacturers who face the problem of finding a high luster finish with good adhesion properties to replace brass plating on zinc alloy and aluminum die cast parts, will be interested in a new gold-colored finish developed by Standard Industrial Products, 1500 Park St., Evansville 4, Indiana.

Marketed as a member of the "Wear-Master" family of finishes, the new product is said to be highly resistant to perspiration acids, has excellent adhesion qualities and good color, and is scratch resistant. It stands up well under salt-spray tests.

Applied by conventional methods and baked on, it presents no special application problems, and the high gloss effect closely resembles plated metal.

Complete information is available from the manufacturers, who are equipped to run tests on small parts, such as door handles, catches, and the like.

IDEAL TACK RAGS
FOR A PEFECT FINISH
Immediate Delivery
IDEAL CHEMICAL COMPANY
1689 Lee Road Cleveland 18, Ohio

Serving THE SOUTHEAST
• LACQUERS • GLAZES
• SEALERS • PIGMENTED WIPING STAINS
• FILLERS
• TONERS • NGR STAINS
Complete Technical Service At Your Disposal
SNYDER BROTHERS COMPANY
Manufacturers of Quality INDUSTRIAL LACQUERS
P. O. BOX 588 — TOCCOA, GEORGIA

No Hose; No Air

A fully self-contained and portable spray gun, known as the "Becker Spray Gun", has been developed by the Sullivan-Becker Co., of Kenosha, Wisc. The gun needs no hose, compressor, motor or other attachments. Power is supplied by an easy-to-load, inexpensive CO_2 cartridge which fits into the handle. Cast aluminum body of the new gun has rust resisting brass and stainless steel inserts. The heavy gauge, chrome-plated steel container is filled from the top; it holds 21-oz. of liquid.

The Becker Spray Gun is useful for spraying paint, varnish, lacquer, stain, oil, wax and for rust proofing, moth-proof, fireproofing. It has already proven to be effective in industry for touching up paint and enamel finished machinery and equipment. The Becker Spray Gun is furnished with three CO_2 cartridges. Extra cartridges, ten for $1.00.

New Fireproof P-V Remover

Kurl-Off is a quick-acting, non-inflammabale paint and varnish remover recently released by Hillyard Chemical Co., St. Joseph, Mo. It is available in necessary quantities to those who can furnish a Defense Order for essential machinery stripping, cleaning, the care of unsafe greasy industrial floors or other vital jobs in plant reconversion to keep existing production and distribution equipment in peak operating condition.

A clear, colorless liquid, it lifts stubborn paint and varnish from wood surfaces in a matter of seconds;

RONCI SPEEDIP WHIRL ENAMELER

Made in Two Sizes, R-100 and R-200 Capacity 312-cu.in. and 1206-cu.in.

IDEAL FOR LACQUERING AND ENAMELING SMALL PARTS UP TO 7-IN. IN LENGTH

CUTS COSTS, SAVES UP TO 80% OF MATERIAL

Carries up to 75-lbs. per load, and up to 30 loads per hour can be coated with lacquer or enamel in these machines.

All operations are within the machine. Dipping tank is raised, submerging the parts in the basket, and then lowered and the parts whirled, throwing off excess material. No additional outside tanks required; no cleaning necessary when changing colors; no loss of material.

PROMPT DELIVERIES

Write for further information and submit samples to be coated.

RONCI MACHINE COMPANY

A Division of F. Ronci Co., Inc.

2 ATLANTIC BOULEVARD CENTREDALE 11, R. I.

spreads smooth and fast and immediately starts to chemically dissolve the paint, varnish, shellac or lacquer—working down to the bare surface without hurting the wood in any way. It contains no alkali, mineral acids, water benzol or carbon tetrachloride.

No neutralization or after-rinse is required, and it will not raise the grain of the wood. Its non-corrosive, non-staining action is absolutely safe on all wood surfaces and it cannot burn or explode. It is also effective on metals.

Polishing Tallows; Grease Sticks

The Hanson-Van Winkle-Munning Co., Matawan, N. J., announces the development of a new line of polishing tallows which should be of interest to the electroplating and polishing industry. These tallows are available in three types.

Neoprene Airdry Coating

Neoprene, the synthetic rubber made by Du Pont, can now be applied as an airdry protective coating for industrial maintenance work on structural steel, concrete, wood and exterior surfaces of tanks and equipment.

It is applied by brush or spray gun in a single coat of 5-10 mils thickness. Its chief merits are those which distinguish neoprene from natural and other synthetic rubber — exceptional resistance to oil, grease and chemicals; resistance to age-cracking by sunlight, weather and ozone. It also possesses the characteristic properties of any rubber product—resilience, elasticity, abrasion resistance, non-chipping and non-cracking.

The new material is produced by Gates Engineering Company, lining and coating applicators, New Castle, Delaware, and has been named Gaco Neoprene Maintenance Coating.

REPLATE

(Not a Lacquer)

QUICK BAKE HI-SOLIDS

CLEAR

Final protective coat for plating replacements.

- Sprayed or Dipped
- Water White
- Won't Discolor
- Excellent Adhesion to Polished Metal
- Resists Abrasion

Adopted by Leading Automobile Manufacturers.

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FOR PROMPT SHIPMENT IN ANY QUANTITY OF

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FINISHES

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Lacquers • Enamels • Dopes • Thinners Clear Metal Finishes • Clear S. G. for Metal • Colored Lacquers • Texture Enamels • Aircraft Finishes • Specialized Production Finishes.

•

RANDOLPH PRODUCTS CO.

CARLSTADT, NEW JERSEY

Chemical Resistant Finishes Adhere to Drawn Metal

The Kay & Ess Co., Dayton 1, Ohio, announces its new 101-E Series of finishes which have the combined merits of alkyd and phenolic types of material. They are excellent for metal coatings where durability, adherance, flexibility and resistance to chemicals are demanded—for example, can coatings drawn after finishing; also finishes for household appliances, automobiles, etc.

The company has developed a large number of finishes which easily meet U. S. Government specifications for both military and civilian uses.

Respirator Hood

A new flyweight respirator hood, the No. 75, designed for protection against dust and paint spray operations has been developed by American Optical Co., Southbridge, Mass.

Extremely light and comfortable,

Gives operator complete protection.

ONE STANDS OUT—

in Production Finishes . it's NEW PERIOD

You'll find New Period Production Finishes outstanding for high quality . . . superior coverage . . . lower costs. No wonder you find these fine finishes on products that stand out.

- Fillers and Stains
- Lacquers—Clear and Semi-Gloss
- Sealers
- Lacquer Enamels—Flat and Gloss
- Synthetic Enamels

Write for 5 Gallon Working Sample at Drum Price

MANUFACTURERS OF FINE WOOD AND METAL PRODUCTION FINISHES

NEW PERIOD Production Finishes

NEW YORK WOODFINISHERS' Supply Co.

109 IMLAY STREET BROOKLYN, N. Y.

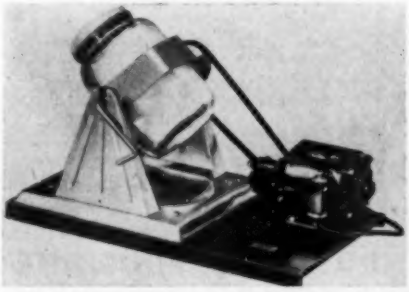
the hood incorporates AO's R2000 Respirator which protects against a variety of dusts or gases by means of seven specific cartridges. Hood design assures full and free movements of the head and neck.

Manufactured of white nylon, olive green twill or white muslin, the hood provides complete protection for eyes, head, neck, shoulders and respiratory organs. Two drawstrings tieing under the wearers' arms assure snug fit.

Tumble Mixer

Andrew Technical Service, 3805 N. Clark St., Chicago 13, Ill., announces a new model tumble jar. This unit is especially suitable for a wide range of industrial and laboratory applications in mixing and blending, as well as tumbling of small parts and materials. It conforms to the U. S. Quartermaster's specifications, for dynamic absorption tests on textile coatings.

The unit includes a one gallon transparent glass jar having a leakproof cap lined with tygon, which is almost universally resistant to corrosion. The gearhead motor rotates the jar at a speed of 55-rpm., but other speeds can be supplied to order. The unit is also available without motor, for rotating by hand.



Available with or without motor.

BOOKS On Finishing Available

"MODERN ORGANIC FINISHES—Their Application to Industrial Products" (452 pages) New	$8.50
"CHEMICAL FORMULARY" (Vol. IX)	7.00
"FINISHING METAL PRODUCTS"—2nd edition (352 pages)	4.00
"PRACTICAL FURNITURE FINISHING" (112 pages)	1.50
"FURNITURE FINISHING" (543 pages)	4.00
"SPRAY PAINTING"—Industrial and Commercial (169 pages)	2.00
"THE MIXING OF COLORS AND PAINTS" (292 pages)	2.50
"WOOD FINISHING" (361 pages)	2.50
"NATIONAL PAINT DICTIONARY" (704 pages)	7.50
"MODERN POLISHES AND SPECIALTIES" (313 pages)	7.50
"PRACTICAL COLOR SIMPLIFIED" (128 pages)	5.00
"GRAINING"—Ancient and Modern (224 pages)	4.00
"THE SILK SCREEN PRINTING PROCESS" (225 pages)	4.00
"SCREEN PROCESS METHODS OF REPRODUCTION" (252 pages)	3.00
"THE SCIENCE OF WRINKLE FINISHING" (204 pages)	5.00
"THE SCIENCE OF MODERN WOOD FINISHING" (386 pages)	6.00
"PAINT & VARNISH TECHNOLOGY" (509 pages)	8.00

Cash Must Accompany Order—
Send for Descriptive Circular

INDUSTRIAL FINISHING
1142 N. Meridian St. Indianapolis 4, Ind.

New Wax Rubbing Lubricants And Polishes

Wilkinson Equipment & Supply Corp., 6958 S. Wentworth Ave., Chicago 21, Ill., announces a completely new line of wax rubbing lubricants and polishes.

The new wax rubbing lubricant is formulated for use in a wide range of furniture finishing systems. Extensive production tests indicate that the new material leaves lacquered surfaces free of "smoke" or oil bloom . . . with the further advantage of faster cutting action, using finer grades of abrasive paper. The lubricating medium cleans up quickly and easily. It is formulated to polish to a soft patina, or provide a surface for high gloss polishing, using additional materials designed to attain varying degrees of surface finish in accordance with the type of merchandise being made.

The company believes that the use of a final wax finishing material will provide a hard mar resistant finish with a degree of surface slip sufficient to minimize many of the normal showroom repairs which are necessitated by damage sustained in packing and handling.

The material is now available in two colors, a neutral for blond or light colored furniture, and a universal brown, for use on the darker tones.

Metal Cleaning Process

The Magnus Chemical Co., Inc., Garwood, N. J., offers its Emulso Clean Process as an efficient method of removing contaminants resulting from metal processing operations. The Emulso-Clean Process is especially effective for removing smut, lithopone, chalk, tripoli, chlorinated and sulphurized oils and other stubborn contaminants. It removes these quickly and completely, eliminating the need for hand scrubbing.

PCC· **PRO-CHEM** WHITE BAKE ENAMEL

HI-SOLIDS TOPS IN COVERAGE & MILEAGE
LOW PRICE REDUCES FINISHING COSTS

GOV'T SPECS OUR SPECIALTY QUOTATIONS ON REQUEST

- Spray, Dip or Tumble—No Primer
- Bake at 275° to 325° F.
- One Coat: Durable—Flexible
- Excellent Adhesion on Metal
- Colors & Non-Yellowing White

PCC· **PROCESSED** CHEMICAL & COATINGS CORP.
33 NORTH FIRST STREET • BROOKLYN 11, N. Y.

The Emulso-Clean Process utilizes Magnusol, an emulsion cleaner supplied in concentrated form to be mixed with safety solvent. This neutral, oil and water-soluble penetrating agent is non-inflammable at working temperature.

The work to be cleaned is either dipped in a tank of one part Magnusol and eight parts safety solvent, or sprayed with the mixture for about 30 seconds. It is then removed, allowed to drain and after a rinse with a water spray the metal surface is left physically clean. A final hot water rinse can be used if the work needs to be self-drying.

The Emulso-Clean Process is safe to use on all metals and is particularly recommended for steel because it leaves a slight trace of solvent which provides temporary rust protection. It is non-toxic, non-corrosive and non-irritating.

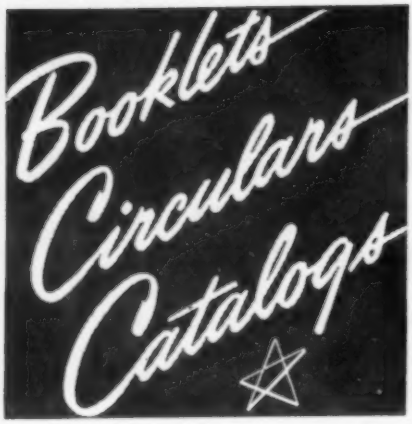
Cleans Compressed Air

A page from the loose leaf catalog of Logan Engineering Co., 4901 W. Lawrence Ave., Chicago 30, Ill., illustrates, describes and gives specifications on the company's Aridifier which cleans and dries compressed air used for spray painting and operating various pneumatic machines.

Free Book on Solvent Cleaning

How solvent detergents serve in hundreds of industrial cleaning applications is explained and illustrated in a 24-page illustrated booklet issued by Oakite Products, Inc., 132F Thames St., New York 6, N.Y., manufacturer of specialized cleaning and related materials

Merits of these materials, as listed by the manufacturer include: 1) rapid dissolution and removal of heavy soils; 2) fast pre-cleaning action to make subsequent critical alkaline cleaning easier; 3) solutions may be used at room temperature in most instances; 4) solutions are easy to mix and ready for instant use; 5) tough soils are removed without hurting paint beneath; 6) fire hazards are minimized; 7) rust after cleaning is prevented; and 8) economy: long-life solutions may be used again and again.



Bulletin on Marine Paints

Interested in marine paints? Then you may enjoy reading Masury's 8½x11-in. booklet on Marine Paints. It deals not only with marine paints and varnishes, but in sparkling copy tells what product to use and the reason for using it. For a free copy of the new booklet, write to John W. Masury & Son, Inc., 1700 Bayard St., Baltimore 30, Md.

Conveyor Chains and Fittings Show in Free Booklet

Many different conveyor chains and attachments for use in reducing the cost of handling and transferring materials in process are described and illustrated in a new 12-page booklet now ready for free distribution by Chain Belt Co., 1600 W. Bruce St., Milwaukee 4, Wisc. The bulletin is No. 50-35.

Webb Conveyor Catalog

Jervis B. Webb Co., 8901 Alpine Ave., Detroit 4, Mich., announces a new Floor Type Conveyor Catalog No. 51.

Printed in two colors throughout, it contains 90 pages of information on conveyor chains, Chain-On-Flat and Chain-On-Edge Floor Conveyors with a variety of pusher dogs used in connection with them. Also typical drive and takeup ends, sprocket and roller turns, cross sections, curves, inclines and declines which are used in these conveyor systems. The most useful engineering data to the conveyor designer has been condensed into five pages. Many other types of floor conveyors, such as slat, apron, scraper, roller flight, etc., are shown.

In addition to photographic illustrations and standard outline drawings, perspective drawings were widely used to acquaint the non-technical reader with the design of the equipment.

Interested executives may obtain a copy from the Jervis B. Webb Co., by requesting it on their letterheads.

Technical Service Bulletin

Prepared especially for manufacturers of paints and enamels, an informative, 16-page technical service bulletin, "Chlorowax 70 in Alkyd Enamel Systems", was issued recently by the Technical Service Division of the Research & Development Department, Diamond Alkali Co., 300 Union Commerce Bldg., Cleveland 14, Ohio, and is now available for distribution.

Reduce Container Corrosion

A bulletin on Inhibitor 038, a compound developed by Monsanto Chemical Co. to reduce corrosion of steel containers by non-aqueous products, has been prepared by the company's Merrimac Division at Everett, Mass.

The bulletin describes the new product and its ability to stabilize corrosive and iron-sensitive liquids in metal containers. Quantities necessary for protecting shellac against contamination also are set forth.

Mogul Impregnating Process

Just published is a new 8-page bulletin, "Mogul Cast-Seal Impregnating Process," by the Metallizing Co. of America, 3520 W. Carroll Ave., Chicago 24, Ill. Bulletin fully explains the equipment used in this process, claimed to be a positive, low-cost method of eliminating casting porosity.

Bulletin on Metal Cleaning Compounds Now Available

MacDermid, Inc. of Waterbury 20, Conn., has recently compiled technical bulletins listing the cleaning compounds and other chemicals which are at present available for the metal finishing industry. Copies are free to those who request them on their firm's letterhead.

Beautiful Finishing Book Free

Protective and decorative coatings for all types of surfaces that have shown truly outstanding performances are described in a new 28-page booklet offered by Bakelite Company, a Division of Union Carbide and Carbon Corporation. The booklet, entitled "The Story of Sur-

QUALASOLE

AMERICA'S FINEST PADDING LACQUER

Creates new life in wood

- **It is the Modern French polish**
- **Produces a beautiful, rich finish**
- **Can be applied easily with a pad**
- **Quick drying, durable, permanent**
- **Meets present day production demands**
- **No other finish compares with QUALASOLE**

Order a Trial Gallon Can Today!

QUALATONE PRODUCTS INCORPORATED

21 GAY STREET, NEW YORK 14, N. Y.

West Coast Distributor: H. Behlen & Bro., Inc., 1755 Berkeley St., Santa Monica, Calif.

Mac's FASHION SEALERS & LACQUERS

A specially formulated sealer for the first coat under clear gloss or flat lacquers provides a good body and sands easily. Also works well under varnish and enamel. A production test will prove its superiority.

MAC'S FASHION LACQUERS are available in clear and opaque for application to all kinds of surfaces. Spray easily and give good coverage in any desired sheen. Outstanding for clearness and attractiveness. **Do not get cloudy.** Write for a production test sample and descriptive folder.

The Lawrence-McFadden Co.

Headquarters for Fine Finishes Since 1875

7430 STATE ROAD *"Our 76th Year"* **PHILADELPHIA 36, PA.**

High-Gloss Screen
Process Colors that
out-perform all others
for product marking!
Reduce product marking costs!
Ideal for use on metal, glass, wood, cloth, leather.
Cleaner, more vivid colors.
Easy to use, fast drying.
Durable, will not rub off.
Produced by the nation's leader in color research.
QUALITY
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PRODUCTS
For complete information and technical service, write —
THE GLIDDEN COMPANY
Graphic Arts and Sign Finishes Division
Cleveland 2, Ohio

face Coatings Based on Vinylite Resins," discusses the many essential applications of these surface coatings and is illustrated with a wide selection of photographs, several of which are in full color.

The booklet describes the variety of surfaces which can be coated, including metal, paper, cloth, masonry, brick, concrete, and wood, and discusses the various techniques of application such as spraying, brushing, roller and knife coating, and dip coatings to which surface coatings based on these resins are suitable.

Copies of this booklet are available to business executives by sending request to Bakelite Corporation, Dept. 1503, 300 Madison Ave., New York 17, N.Y.

Flat-Top Conveyor Chain Can Curve Around Corner

A new type of conveyor chain, known as Rex Flex Top, is described in bulletin 51-59 just released by Chain Belt Co., 1600 W. Bruce St., Milwaukee 4, Wisc. The new chain is of the "flat-top" type, but its construction is such that it can flex in two planes, horizontal and vertical, and can curve around the sharpest corners with ease. The Flex Top Conveyor Chain bulletin contains pictures and specifications on this remarkable new product.

Use Dy-Chek to Show Flaws in Metal

New, illustrated Dy-Chek Bulletin 500 fully describes Dy-Chek the Dye Penetrant Method of metal inspection, and shows how this chemical process simplifies non-destructive testing. Dip, brush and spray methods are explained, and varied applications in factories and in the field are discussed. From Dy-Chek Co., Division of Northrop Aircraft, Inc., 1515 E. Broadway, Hawthorne, California.

New Book on Plant Layout

The one remaining frontier for major cost reduction in manufacturing operations is plant layout, where 50% of the non-productive labor force is employed in industry today. This fact is emphasized in a new book, "Plant Layout: Planning and Practice," written by Randolph W. Mallick and Armand T. Gaudreau, and published by John Wiley & Sons, 440 Fourth Ave., New York 16, N. Y.

Representing the most modern practices in American industry the book is based on the authors' more than 20 years of experience, from millhand to executive manager, in a cross-section of industrial firms. Mr. Mallick is currently executive

staff engineer for the Westinghouse Electric Corp. Mr. Gaudreau, formerly associated with Westinghouse, is managing partner of Gaudreau, Rimbach & Associates, management consultants. "Plant Layout" contains 391 pages and is priced at $7.50.

Pressure-Sensitive Tapes

"Scotch" brand pressure-sensitive tapes that meet government specifications are listed in a new pocket sized catalog available from Minnesota Mining & Mfg. Co., St. Paul, Minn.

The booklet lists eight official U. S. government specifications for tape, including 20 sub-sections, and cites the corresponding tape for each section.

Included are specifications for masking cellophane, electrical, photographic, drafting and packaging tape.

Anti-Corrosion Compounds

G. W. Smith & Sons, Inc., 5400 Kemp Road, Dayton 3, Ohio, announces a new 4-page Bulletin on "Protect-O-Metal" weld spatter, preventives and metal protection compounds, with full details on composition, application, and potential savings provided by three grades of Protect-O-Metal.

Protect-O-Metal No.8 provides corrosion protection for long periods . . . of special value to manufacturers and fabricators who may store metal stock, semi-finished materials, etc., out-of-doors prior to welding operations. It dries quickly to a thin hard film which protects against dirt, moisture, corrosion and which prevents adhesion of weld spatter.

Worker Protection from Fumes From Open Tanks

To protect workmen from any escaping gas, vapor, or mist involved in open-surface tank operations, a new American Standard Safety Code has just been approved and published by the American Standards Association. It is the American Standard Safety Code for Open-Surface Tanks, Z9.1-1951.

Operations involving the immersion of materials in liquids and their subsequent removal are covered in this code. These include elcetroplating, washing, anodizing, pickling, dipping, bleaching, degreasing, alkaline cleaning, stripping and rinsing.

The safety of the operator is the primary concern of this standard. Its provisions are intended to protect him from contact with gases, vapors, mists, or liquids involved in any open-surface tank operation that might injure his health.

Copies of the book may be obtained from the American Standards Association, 70 E. 45 St., New York 17, N. Y. at 75 cents a copy.

DUST-ALL Tack Rag

for better, cleaner finished jobs

Remove the specks, lint, dust from surfaces to be painted; wipe them off with a Dust-All Tack Rag; be sure of fine, blemish-free, finished jobs.

Get the Dust-All Tack Rag in the familiar Red Checkered Bag; also available in 150-250-500 yard rolls.

HARDING Manufacturing Co.
10618 GRATIOT AVE.
DETROIT 13, MICH.

"Wood Graining"

ADDS

Eye Appeal

American Graining Plates are photographic reproductions of fine woods.

AMERICAN RICHWOOD PRODUCTS CO.
Graining Plate Division
104 E. Mason St., Milwaukee 2, Wis.

Industrial FINISHING Editorial

Fire Losses Are Up 26%; Better Protection Needed

Large-loss fires ($250,000 or more damage) increased 12% in 1950 over the previous year in the United States and Canada and *caused 26% more damage,* the National Fire Protection Assn., non-profit fire control group report. The findings of the NFPA have been compiled in a 64-page illustrated booklet, "Large Loss Fires of 1950 and Their Lessons" which is available from the NFPA, 60 Batterymarch St., Boston, Mass., for one dollar a copy.

There was a *sharp increase in the number of large loss fires in manufacturing plants* in 1950 and a substantial increase in the number of fires in warehouses.

As in previous years *over 60% of all fires occurred during hours of darkness.* Half of the large fires occurring in manufacturing plants originated during operating periods when detection was presumably prompt. This fact indicates that *any investment made for prompt extinguishment, such as automatic protection and organization of employees into effective fire brigades, is amply justified.*

More than one-third of the fires occurred in towns having less than 5,000 population or in locations outside city limits, in contrast with the less than 20% that occurred in cities of over 100,000 population where high property values are concentrated. The comparatively weak fire protection service noted in many small communities explains in part the disproportionately large number of fires in the small towns, according to the NFPA.

As in 1949, two-thirds of these serious fires were first reported by telephone; 15% were sent in from street boxes.

While 61% of the fires started from unknown causes, *68% of the fires of known cause could have been prevented if the hazard responsible for the fire had been well safeguarded.*

Geographically, the large loss structural fires occurred in 40 of the 48 states, Hawaii and Alaska and in six Canadian provinces. The largest number occurred in California which suffered 19 of these "biggest of the year" fires. Pennsylvania and Illinois each had 15; New York State 14; Ohio, 13. Canada sustained 23 of the major structural losses.

Silicone-Base Finishes; Heat Resistant and . . .

★ The use of silicone-base finishes has increased markedly during the past year. It is interesting to consider the reasons for the rather wide accpetance of silicone finishes for specialized applications.

Since commercially practical silicone finishes were first marketed about five years ago, thousands of

---

★ *Guest Editorial . . . Many readers can write an excellent editorial—two or three paragraphs that present a timely suggestion or valuable idea which will stimulate thought on a live subject. The Editor welcomes guest editorials and pays for those used.*

progressive manufacturers have been testing various silicone paints in their laboratories to see if the remarkable properties of these paints would give *their* products any engineering and/or sales advantages. Silicone finishes have at least three distinctive fields of application. They are especially useful for:

1) Extreme heat-resistance.
2) Extreme weathering-resistance.
3) Unique non-adherent properties.

After months and, in many cases, years of testing, manufacturers have learned (and many are still learning!) that silicone finishes will provide them with a high order of heat resistance and durability. Silicone finishes are especially suited to such products as space heaters, furnaces, steam generators, mufflers, processing equipment and hundreds of others because the use of these finishes gives a durable and attractive end product.

With the recent curtailments of certain metals which are commonly used as plating for parts that are exposed to high temperatures, it has been found (after prolonged testing dating back to the pre-shortage period) that silicone finishes provide an admirable alternate for chrome, cadmium and zinc plating in many instances. In fact it seems likely that, due to the interesting color effects and economy obtainable with silicones, some of these "alterantes" will be permanent standards for appearance and performance in the post-crisis period also.

Another property of silicone resins is that, properly formulated,, they make extremely weather resistant enamels for such applications as advertising and highway signs, street signs, metal awnings and sidings, and possibly even for automotive vehicles. Florida exposures of up to three years indicate that silicone resin enamels will out-weather even the best alkyd resin enamels.

Silicone coatings also have this unique property: Other coatings or normally "sticky" materials do not adhere to cured silicone films. This feature is made use of in the well-known coating for bread pans, a procedure which makes it unnecessary to grease the pans (to prevent sticking) for 300 to 500 bakes. Other applications for this remarkable property of the silicones are already being investigated.—*M. A. Glaser.*

Quality Coatings—Sign of a Reputable Manufacturer

★ The consumer of paint must have a certain amount of faith in his paint supplier. The small company buying industrial finishes generally does not have the necessary equipment to test the durability of the coating it buys. It does not have a humidity cabinet, salt spray cabinet, exposure rack or weatherometer, for example.

The finishing foreman makes sure that he can apply the paint without trouble in the plant, but he takes the word of the paint manufacturer that the coating has successfully withstood the various applicable tests. Each finish should be tested in accordance with the particular use for which it is intended. The buyer of shelf goods

REPRINTS AVAILABLE!

Paul Blackmore's 12-page article entitled

"HOW MUCH IS A GALLON OF PAINT WORTH"

as published in the August, 1950, issue of this magazine.

PRICE 10 CENTS PER COPY—

Stamps Accepted.

INDUSTRIAL FINISHING Magazine

1142 N. Meridian, Indianapolis 4, Ind.

S-Y TRADE MARK *Lacquers*

For many years we have supplied the finishing industry with every type of Lacquer necessary for durable and beautiful finishes, outstanding in sales appeal.

We believe we can be of help to you—why not send us your inquiry?

Phone—Write—Wire!

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CHICAGO 14

Finishing Equipment-Systems

PLANNED, BUILT, INSTALLED

Dip • Flow • Spray

✔ AUTOMATIC

✔ MANUAL

✔ CONVEYORIZED

May we suggest to you low cost top quality production methods?

Morrill and Renshaw Inc.

Finishing-Coating-Spraying Engineers

624 N. GREEN ST.

CHICAGO 22, ILL.

Manufacturers of Baking Ovens, Washing Machines, Spray Booths

has even less means of testing the paint he buys. He buys the paint he needs, usually from a company whose products he has used successfully in the past. He applies it and observes how well it stands up.

The reputable manufacturer zealously watches the quality of the coatinge he sells. He is not interested in turning out inferior products. He knows that his reputation, good or bad, will be a large factor in the success of his business.

Today, with shortages of many materials, the paint manufacturer is faced with the problem of keeping up the quality of his paint and keeping his costs as low as possible. If shortages force substitutions he makes certain that the substitute will do the job. Using his experience, know-how and ingenuity, he usually finds a way to surmount the problems that continually arise. He realizes that this is a good time to show his customers that, from a technical point of view, his company is in the vanguard of the industry.

The alert and informed manufacturer of finishing materials knows that by doing a good job in these trying times he is creating good will. His efforts will produce satisfied customers and give him the business success he deserves.—*E. V. Goldstein.*

Portable Soft Abrasive Blast Cleaning Machine

The Pangborn Corporation, Hagerstown, Maryland, announces a new 4-page, 2-color bulletin No. 118 covering its portable Soft Abrasive Blast Cleaning Machine. Illustrated with six photographs and one line drawing, the bulletin tells how such grits as corn cobs, walnut shells, peach pits, sawdust, etc. are used to blast grease and dirt from machines and parts without damaging the surface material of the machine or part.

Typical of the application examples included in the bulletin is an illustrated description of the cleaning of large motors formerly cleaned with inflammable solvents.

KEEP BOOTHS FIRE-SAFE
THIS LABOR-SAVING WAY
WITH

LIQUID ENVELOPE

PEELABLE SPRAY-BOOTH COATING

Using expensive labor to scrape down spray-booths costs a lot more than peeling off accumulated overspray in big sheets. Safer, too. Order a 5-gallon Test-Sample at Drum Lot price.

BETTER FINISHES & COATINGS, INC.
268 Doremus Avenue, Newark 5, N. J.
122 East 7th St., Los Angeles 14, Calif.

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General Spray Equipment Co., Boston, Mass.
Bay State Equipment Co., Springfield, Mass.
Lea Manufacturing Co., Waterbury, Conn.
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Kellerman Paint Co., New York, N. Y.
Grapek Paint Co., Newark, N. J.
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R. W. Ranton Co., Cleveland, Ohio, Indianapolis, Ind.
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Paints & Lacquers, Inc., Chicago, Ill.
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M. E. Smith Co., Los Angeles, Calif.
C & H Supply Co., Seattle, Wash.
Hugh Russel & Sons Ltd., Montreal & Toronto, Canada

Pre-Heating Paint In Cold Climate

★ We operate three pairs of reverse position water curtain spray booths through which an overhead monorail conveyor travels at a speed of 8-ft. per minute. With every conveyor hook loaded, you can readily see that the six spray guns are open practically all of the time.

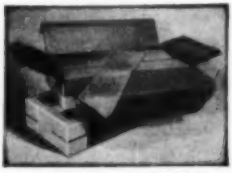
About two years ago we decided to install paint heaters. We advised our paint supplier so that he could change the formulation of the primer and top coat enamel for hot application. In time the six heaters were installed in the lines. Throughout late summer and fall we had practically no difficulty in maintaining uniformly correct material temperatures. However, when real winter weather set in it was impossible to hold the material at correct operating temperature levels, even with the paint heaters set up to full capacity.

Our plant is located in the north where it gets very cold in the winter. Our finishing room is located in an L-shaped building which is exposed to wind and cold on three sides. The paint is stored in an unheated room. With the spray guns open all of the time the paint didn't have time to become properly heated.

Last winter we overcame this trouble by installing two pre-heating tanks in the paint lines between the pressure tanks and the paint heaters. The paint is pumped from the pressure tanks through a pipe system in the insulated pre-heat tanks. The pipes

NOW! Tack Cloth in Handy Rolls *or* Cut Bulk

Cut off any size piece and use as needed.



Already cut and folded, ready to use.

Now you can get Tack Cloth packed the way it's easiest for you to use—either in 150 yard rolls of 36" wide cloth or in handy cartons—100 or more Tack Cloths to the carton.

No matter which way you buy it, you can be sure that every square inch will **stay** SOFT and TACKY until the very last bit is used up.

The Cut Bulk size is 18" x 36"—folded to 4½" x 18" for easy handling. **All of our Tack Cloth is Spontaneous Combustion-Proof, Lint-Free and Wax-Free.** It's clean and sanitary—there's no waste.

Write today for complete information, prices and samples.

Baughn Chemical Products Company

"The Tacky Wiper Specialists"

7027 N. RAVENSWOOD CHICAGO 26, ILL.

Also Individually Packed in Glassine Envelopes —144 to the Carton.

A WARRANTY OF SATISFACTION IN EVERY CARTON

are now surrounded by hot water the temperature of which is thermostatically controlled. We hold the water temperature in these pre-heating tanks at 170°F., and the paint heaters are set at 185°F. Pipes leading from the pre-heating tanks into the spray booths to the material hose connection are also insulated.—*X Industries.*

Where Perfect Wood Finish Begins

★ When we look over the better grades of furniture we are always favorably impressed by the beauty of the surface finish. In every factory that produces fine furniture there is a staff of finishing specialists who know how to solve problems that come up. The end result of their knowledge and skill, of course, is the "surface beautiful."

Many people think of the finishing process as beginning in the finishing room, but really its foundation and what leads up to it, as an end result, starts farther back. Selection and purchase of the lumber, its drying, all of the machine work including machine sanding, and finally the assembly or what we generally term "cabinet work" which includes the making of perfect joints, accurate fitting, wiping off excess glue, and final smoothing by careful sanding —each and every one of these operations is quite important. The slighting of anything mentioned here will certainly affect the finishing process.

Dry lumber—that is lumber with a moisture content of only 6% to 10% —is essential for use in products that are to be used inside comfortably heated and properly ventilated buildings.

All machine work should be per-

formed with sharp cutting tools and accurately adjusted machines. A surface "pounded" or "pressed" with the heel of dull knives or bits is not ideal for finishing. The compressed grain may swell and show up as an uneven surface after wet finishing materials (such as stains, bleaches, etc.) are applied to it.

That fine wood dust produced by both machine and hand sanding must be cleaned from all surfaces to receive finishing materials. It may be blowen off with a compressed air gun, brushed off or removed by vacuum cleaner.

The ideal wood surface to receive finishing material is clean, dry and warm (comfortable room temperature). Quality finishing materials, properly applied to such surfaces, will adhere well and there need be no fear of the finish peeling, cracking or blistering.

Finishing materials, when used, should be at comfortable room tempeature too. If anything is withdrawn from "cold storage" and if it must be used soon, it should be slowly brought up to reasonable temperature in some safe way (no open flame or dangerous conditions). Materials can be thinned by being heated; in many cases partial or complete thinning by heat is preferable to thinning with solvents.

Naturally, an adequate length of drying time must be allowed after each application of finishing material. One coat must be thoroughly dry before another coat is added. Drying may be and often is speeded up by the use of heat and forced movement of air with fans. If or when one coat of finishing material is applied over another coat that is not dry, shrinkage of the top coat may occur; or if a coating is put on too heavy, shrinkage may take place.

In conclusion I wish to emphasize the importance of friendly and contin-

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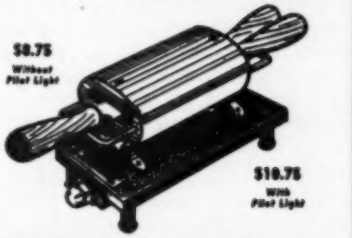

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EASTPORT, MAINE

uous cooperation between the heads of the cabinet department and the finishing room in every factory where finished wood products are made. Wood products in the white—especially furniture and fine cabinets should be in perfect surface condition when delivered to the finishing department. Careful inspection at this point will contribute immensely toward producing better finished goods, with less patching and repair work by finishers.

While it is possible for expert finishers to perform near mircales with their modern materials and tools, please remember, *this is not production work.* The finishing department of a production factory is the most expensive place (for the manufacturer) to fix up, cover up or doctor up surfaces that arrive in slighted, faulty or damaged condition.—*Hans H. Druge.*

Binks' New Office in N. Y. in Long Island City

To better serve the increased needs of the New York and Northern New Jersey territories, the Binks Mfg. Co. (spray guns, spray finishing equipment, cooling towers and spray nozzles) has established a new office in New York. The Binks Building is located at 22-01 41st Avenue, Long Island City 1, New York, just across the East River from Manhattan at the Queensboro Bridge.

The new, larger quarters have 6,000 square feet of floor space, enabling Binks to carry a complete stock of equipment right in the New York area.

Ed Cremer is Sales Engineer and Manager of the new office. Special emphasis will be placed on technical service to customers. Mr. Cremer, who has been in charge of the Binks Engineering Office in New York for some time, is an experienced industrial engineer. He has a strong background in industrial finishing gained through his work in the Binks Engineering Department and Industrial Sales Division. Mr. Cremer will assist users of spray finishing equipment in the proper layout of finishing departments and in the selection of spray painting equipment to meet any specific need. Without cost or obligation, he offers engineering help on all finishing problems. Ample facilities are available for overhauling and reconditioning Binks equipment.

Other Binks personnel in the New York office include John George and Robert Rorden, Sales Engineers, together with Bernard Loomis who will work closely with jobbers and their salesmen.

Binks' new office in Long Island City, N. Y.

Random Comment on the Industrial Scene

(Continued from page 13)

by the manufacturer Rubber Engineering and Chemical Co. of Lake Zurich, Illinois in various sizes, the "Cut Rite Bloc's" tough, durable surface stands up under the constant hard usage of the cutting room.

* * *

A Rust Inhibitor that protects rifles during shipment is announced. This volatile rust inhibitor, produced in powder form, gives off a vapor which prevents rust from forming on steel surfaces when the vapors are confined to the enclosed space of a package container. The inhibitor is available to industry in general. The manufacturer states that protective life up to ten years can be obtained with this chemical.

* * *

Water Sprayed Roofs are cooler, says G. E. Sutton of the University of Florida, speaking to the American Society of Heating & Ventilating Engineers. During the hot months roof temperatures may reach 150° F. under a blazing sun. It is possible to reduce this temperature by as much as 50° F. with rotating water sprays.

Comparing the spray method with the usual flooding or water pool method of cooling and using the 150° roof temperature as a basis, a 2-in. water pool will reduce the temperature to 108° F., and a 6-in. pool will bring it down to 103° F. The rotating spray will lower it to 100° F.

* * *

Oil Shale. Recent sampling of the Green River Oil-Shale formation in northwest Colorado, where the Bureau of Mines is mining shale and producing shale oil on a demonstration scale,

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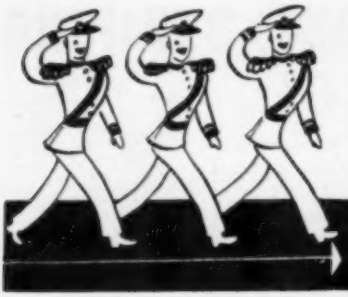

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has increased previous estimates of shale deposits in this area substantially. On the basis of sampling and assay data obtained since 1944, a Bureau of Mines report released by Secretary Chapman says, partly blocked out and geologically inferred shale running 25 gallons a ton or more in the richest area theoretically would yield 125 billion barrels of oil, the actual recovery depending on the mining and processing losses. Combined with deposits of 15-gallon-a-ton shale, the theoretical yield in the entire area rises to 494 billion barrels.

* * *

Maintenance of Equipment was given first consideration at the recent Plant Maintenance Show held in Cleveland. M. A. Travis, plant engineer of Nash Motors Body Division, Nash-Kelvinator Corp., cited figures to show that a good maintenance program is a major factor in the ultimate profit of any operation.

Mr. Travis said his plant has a maintenance crew of 400 out of a total plant employment of 8500. Percentagewise the automotive industry maintenance cost averages 7.7% of net sales; blast furnace steel producers will average as high as 10%; miscellaneous manufacturing industries will average 3.6%, and cigarette manufacturers claim a low of 0.3%.

Generally speaking, small business is more likely to overlook the importance of maintenance due to lack of a definite program. The foregoing figures on maintenance cost are interesting and should provide a yardstick for manufacturers large and small. If your maintenance cost is below average, you might check into it to see if it is really adequate.

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Powerful, direct-connected (no gears), 3450 r.p.m., 100-120 v AC air-cooled motor. All sealed ball-bearing construction. Die-cast aluminum housing, polished. All-position handles. In hand weight only 5 lbs. Insulated with ground wire for wet as well as dry sanding or rubbing. Available accessories—deep contour pads, surface plates, felts, etc. Takes any sheet abrasives—3 covers 4½" x 6½" from standard 9" x 11" sheet.

A time saving quality tool priced so every worker can have one.

Write for Circular

Speed Way MANUFACTURING CO.
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Standard Varnish Works Has Changes in Executives

Recent changes in the organization of Standard Varnish Works have been announced by the President, Mr. M. H. Corbin. Mr. Corbin continues as President of the parent company in New York and also assumes the presidency of the Illinois Corp., formerly held by Mr. E. E. Day, who has recently been elected Chairman of the Board of Directors of the Illinois Corp.

Mr. H. H. Rittenhouse has been elected Executive Vice-President and General Manager of the Chicago plant. Mr. Raymond F. Hart, former assistant to the President, is taking over the duties of Mr. Rittenhouse in New York, as Controller.

Mr. H. F. Boehlert, previously Export Sales Manager is now Industrial Sales Manager under the Vice President and Director of Industrial Sales, Mr. Carl Bauer. His former assistant has been promoted to Export Sales Manager.

First-Hand Study of Surface Coatings in the Tropics

The effects of extreme temperature and humidity on anti-corrosive and fungus-resistant coatings were recently studied directly on the spot by a group of scientists who attended the Isthmian Technical Corrosion and Protection Conference, held in the Panama Canal Zone Area, Cristobal and Colon.

Highlights of the Conference were an inspection of the Panama Canal Locks and an expedition into the jungles where electronic equipment has undergone outdoor exposure to tropical weather conditions and the presence of jungle life for several years.

According to Mr. B. F. Ames, General Sales Manager, Maas & Waldstein Co., who attended the Conference, these first-hand studies brought to light much new and valuable information on fungus-resistant and mildew-resistant coatings.

"As a result of this expedition," said Mr. Ames, "Maas & Waldstein Co. will be in a better position to offer newer types of fungus-resistant lacquers and synthetic enamels, which will enable the company to serve the defense program effectively."

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Manufacturer in Pennsylvania requires expert finisher on wooden television cabinets. Capable of handling large finishing department and at least 100 men. Must have knowledge both technical and practical in all finishing phases. Good salary. In reply, give full and complete details and references. Address IF-793, care Industrial Finishing.

LABORATORY SUPERVISOR.

Industrial paint and lacquer. Man, 8-10 years' experience in lacquer and synthetic formulations for metal and wood. National organization. Give details first letter. Address IF-798, care Industrial Finishing.

FINISHES FORMULATOR WANTED.

Industrial Finishes Formulator, lacquer and/or synthetic. Minimum 3 years experience preferred. EGYPTIAN LACQUER MFG. CO., P. O. Box 811, Lafayete, Indiana. Attention: J. H. Whiteside, chief chemist.

MAN WANTED

With several years' experience in formulation of lacquer furniture finishes. Excellent opportunity for advancement with small expanding organization. Snyder Brothers Company, P. O. Box 548, Toccoa, Georgia.

LACQUER CHEMIST WANTED.

College graduate with three to five years' experience for paint, varnish and lacquer formulation for new product development group in recently formed laboratory. Southern location. Please send full details of education, experience and salary requirements. Address IF-794, care Industrial Finishing.

SALESMAN OR MANUFACTURER'S AGENT WANTED.

A live wire go getter for Michigan Territory. Complete line of highest quality finishes for furniture, cabinet, pianos, fixtures and all wood products. Also Government Specified Finishes. Commission Basis. Address IF-801, care Industrial Finishing.

LACQUER SALESMAN.

Eastern manufacturer of thinners, lacquers and synthetics wants a salesman for established New Jersey territory. Excellent opportunity. Experience absolutely essential. All replies confidential. Our employees know of this ad. Address IF-800, care Industrial Finishing.

WANTED EXPERIENCED SPRAY MAN

We require the services of a high caliber spray man to work with established dealers to demonstrate and service Bede Paint Heaters. Work entails contact with leading finish manufacturers and large industrial firms in the promotion of the Hot Spray Process. Traveling involved. Excellent opportunity in interesting work. State whether married or single and full qualifications including past experience as well as salary expectations. BEDE PRODUCTS INC., 4311 Ridge Road, Cleveland 9, Ohio.

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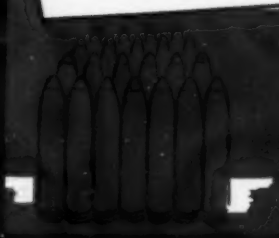

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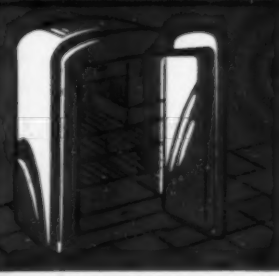

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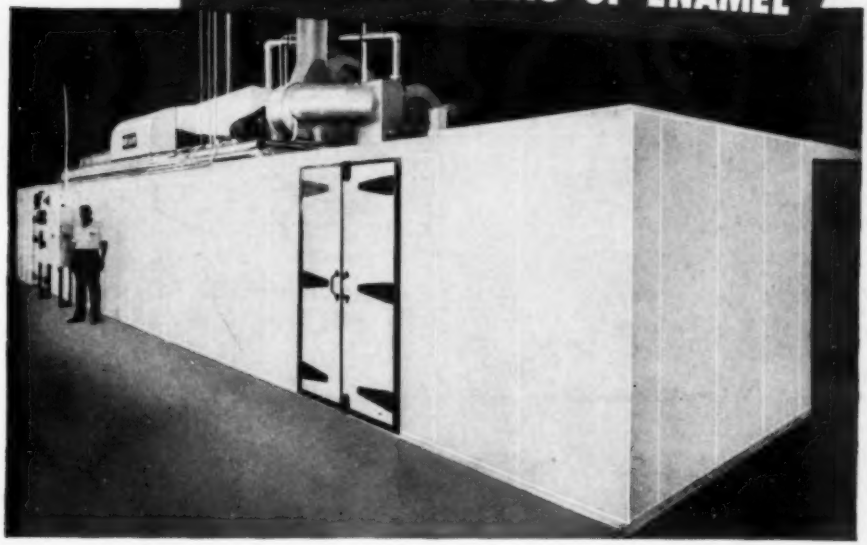

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